Compliance Monitoring and Enforcement Program Report

Q1 2017

May 10, 2017
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Preface

The North American Electric Reliability Corporation (NERC) is a not-for-profit international regulatory authority whose mission is to assure the reliability of the bulk power system (BPS) in North America. NERC develops and enforces Reliability Standards; annually assesses seasonal and long-term reliability; monitors the BPS through system awareness; and educates, trains, and certifies industry personnel. NERC’s area of responsibility spans the continental United States, Canada, and the northern portion of Baja California, Mexico. NERC is the Electric Reliability Organization (ERO) for North America, subject to oversight by the Federal Energy Regulatory Commission (FERC) and governmental authorities in Canada. NERC’s jurisdiction includes users, owners, and operators of the BPS, which serves more than 334 million people.

The North American BPS is divided into eight Regional Entity (RE) boundaries as shown in the map and corresponding table below.

The highlighted areas denote overlap as some Load-Serving Entities participate in one region while associated Transmission Owners/Transmission Operators participate in another.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>FRCC</td>
<td>Florida Reliability Coordinating Council</td>
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<tr>
<td>MRO</td>
<td>Midwest Reliability Organization</td>
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<tr>
<td>NPCC</td>
<td>Northeast Power Coordinating Council</td>
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<tr>
<td>RF</td>
<td>ReliabilityFirst</td>
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<td>SERC</td>
<td>SERC Reliability Corporation</td>
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<td>SPP RE</td>
<td>Southwest Power Pool RE</td>
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<tr>
<td>Texas RE</td>
<td>Texas Reliability Entity</td>
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<tr>
<td>WECC</td>
<td>Western Electricity Coordinating Council</td>
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**Introduction**

To supplement its annual Compliance Monitoring and Enforcement Program (CMEP) report,¹ NERC provides the Board of Trustees Compliance Committee (BOTCC) with quarterly reports that track a number of metrics and provide additional information on NERC’s oversight of the REs, evaluation of the risk-based CMEP, and identification of needed improvements.

In Q1 2017, NERC continued its qualitative reviews of various aspects of the risk-based CMEP to evaluate the effectiveness of CMEP strategies and the consistency of program execution across the ERO Enterprise. NERC also continued to focus its enforcement and compliance resources on entity-specific risks and serious risk noncompliance.

As discussed below, through Q1 2017, NERC identified a number of potential enhancements to the risk-based CMEP and submitted a petition to FERC requesting approval for certain changes. NERC also submitted to FERC an informational filing affirming the commercial role of load-serving entities (LSEs) and the minimal effect of their removal from the NERC Compliance Registry (NCR) on the reliability of the BPS.

The average age of noncompliance in the ERO Enterprise inventory is now less than seven months, the lowest it has been since 2013. Compliance Exceptions (CEs) continue to be the dominant disposition method for noncompliance posing a minimal risk to the reliability of the BPS. Lastly, REs continued to conduct risk-based compliance monitoring and enforcement activities, such as Inherent Risk Assessments (IRAs) and Internal Control Evaluations (ICEs). NERC will continue to track and report on these metrics, among others, throughout 2017.

**Highlights from Q1 2017**

In February 2017, NERC filed its annual CMEP Report with FERC. The annual report highlighted key ERO Enterprise activities, provided information and statistics regarding those activities, and identified the ERO Enterprise’s 2017 CMEP priorities that included the progress of the program and described the key activities that occurred in 2016.²

**Enforcement**

In the petition accompanying its annual CMEP Report, NERC proposed certain enhancements to the CE and Self-Logging Programs based on the ERO Enterprise’s experience with the implementation of these programs.

During Q1 2017, the ERO Enterprise continued its work in aligning penalty strategies with the risk posed by noncompliance. Representatives from the REs and NERC enforcement are refining guidance to assist REs in determining penalties in accordance with the Sanction Guidelines.³ Activities are planned for the remainder of 2017 to further align RE methodologies in determining penalties.

In Q1 2017, NERC staff began its joint annual review of the Find, Fix, Track, and Report (FFT) and CE Programs with FERC staff. In addition, NERC staff finalized its findings from the process review of the REs’ self-logging programs. NERC staff determined that the REs are admitting the appropriate entities into the program, and logs are accurate and adequate.

NERC staff filed with FERC four Notices of Penalty (NOPs) resolving nine violations of NERC Reliability Standards in Q1 2017, totaling $565,000 in monetary penalties.

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¹ [http://www.nerc.com/pa/comp/Pages/AnnualReports.aspx](http://www.nerc.com/pa/comp/Pages/AnnualReports.aspx).
³ NERC’s Sanction Guidelines are available here: [http://www.nerc.com/FilingsOrders/us/RuleOfProcedureDL/Appendix_4B_SanctionGuidelines_20140701.pdf](http://www.nerc.com/FilingsOrders/us/RuleOfProcedureDL/Appendix_4B_SanctionGuidelines_20140701.pdf). As legislation or other enforcement mechanisms are promulgated in Canada and Mexico, a different or modified framework may be necessary.

Finally, NERC enforcement is continuing to oversee the implementation of the risk-based CMEP and is meeting related goals, as shown in Appendix A.

**Compliance Assurance**

During Q1 2017, NERC began executing its 2017 compliance monitoring oversight plan, which identified key priorities for NERC monitoring. Among other things, key priorities include how the ERO Enterprise is monitoring risks to reliability and security of the BPS, considering and reviewing internal controls, and implementing an overall consistent and effective program. For example, NERC initiated oversight activities to address the effectiveness of Critical Infrastructure Protection (CIP) Standard CIP-014-2 implementation for physical security and is conducting a study to understand the strengths of the CIP Version 5 remote access controls. Additionally, NERC closed out oversight activities related to two sections of the NERC Rules of Procedure (ROP): RE completion of auditor training;\(^4\) and RE audits of Reliability Coordinators (RCs), Transmission Operators (TOPs), and Balancing Authorities (BAs) every three years.\(^5\) NERC found that auditors and observers completed the required training for auditors and REs completed the required audits for RCs, TOPs, and BAs during the sampled period.

In Q1 2017, NERC and the REs supported the Compliance Guidance Program by releasing the ERO Enterprise CMEP Practice Guide: Phased Implementation Plans with Completion Percentages, and endorsed two Implementation Guidance documents for System Operating Limit Definition and Exceedance Clarification and TPL-001-4 Standard Application Guide.

The ERO Enterprise continues to collaborate and move toward effective, consistent, and efficient implementation of a program for coordinated oversight of Multi-Region Registered Entities (MRREs) that have requested coordinated oversight. To that end, the ERO Enterprise developed common procedures and identified process improvement needs, conducted training for ERO Enterprise staff on the procedure, and began implementing those procedures in Q1 2017.

**Certification and Registration**

In January 2017, NERC submitted an informational filing in response to FERC’s directive to report on the effect of the removal of the LSE function on the next-day studies of TOPs and BAs.\(^6\)

In Q1 2017, the NERC-led review panel\(^7\) heard two reviews under Risk-Based Registration. Additional activities for Q1 2017 included beginning research on how Coordinated Functional Registrations are handled, coordinating with the industry Organization Registration and Certification Subcommittee of the NERC Compliance and Certification Committee (CCC), and supporting the entity registration centralized database effort (xRM Entity Registration).

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\(^4\) NERC ROP Section 402.9.

\(^5\) NERC ROP Section 403.11.1.


\(^7\) The NERC-led, centralized review panel, comprised of a NERC lead with RE participants, evaluated requests for deactivation of, or decisions not to register, an entity that meets the Registry Criteria; requests to add an entity that does not meet (i.e., falls below) the Registry Criteria; disputes regarding the application of the Registry Criteria; and requests for a sub-set list of applicable Reliability Standards.
Chapter 1: Enforcement

Enforcement Oversight
Petition for Certain Enhancements to the Risk-Based CMEP
Based in part on the results of oversight activities conducted in 2016, the ERO Enterprise identified two enhancements to the risk-based CMEP that it proposed in the petition accompanying the 2016 Annual CMEP Report. In its petition, NERC proposed providing minimal risk CEs identified through self-logging to FERC non-publicly and expanding the use of CEs to include certain moderate risk noncompliance currently processed as FFTs. NERC would develop and submit to FERC any necessary ROP changes associated with the two enhancements upon FERC’s approval of the proposed enhancements.

Penalty Alignment
In Q1 2017, NERC and the REs continued aligning the methodologies applied when assessing penalties across the ERO Enterprise. Based on the accumulated experience with reviewing penalties for noncompliance with the NERC Reliability Standards over the past nine years, NERC and the REs undertook a collaborative effort to conduct a comprehensive review of the weighting approaches the REs use when considering the elements of the Sanction Guidelines in assessing penalties. Throughout the remainder of 2017, the ERO Enterprise will hold various penalty training and alignment exercise opportunities for ERO Enterprise staff.

2017 Risk-Based CMEP Process Reviews
Annual FFT and CE Programs Review
In Q1 2017, NERC and FERC staff began the annual review of the FFT and CE programs. NERC and FERC staff sampled 23 FFTs and 100 CEs to collect data on the effectiveness and efficiency of the FFT and CE programs and assess the REs’ adherence to the risk-based CMEP, various FERC orders, and NERC and FERC-issued guidance. As of the end of Q1 2017, NERC and FERC staff have completed the initial review of the REs’ implementation of the programs. NERC anticipates staff will be providing feedback to the REs and finalizing the results of the review over the course of Q2 2017.

Self-Logging Process Review
In Q1 2017, NERC staff finalized and provided its findings to FERC and the REs regarding its process review of the REs’ self-logging procedures. The purpose of the review was to assess compliance with the NERC CMEP, relevant FERC Orders, and the ERO Self-Logging Program to evaluate the consistency of each RE’s practices.

NERC staff’s review confirmed that the majority of REs are successfully and consistently implementing the Self-Logging Program. NERC staff found that the ERO Enterprise has a more thorough understanding of the risk posed by noncompliance across the BPS because of registered entities’ active participation in the program. Beyond the enhancements included in the 2016 Annual CMEP Filing discussed above, NERC identified four additional improvements that the ERO Enterprise will be incorporating into the Self-Logging Program to focus on outreach over the course of 2017. These improvements include the following:

- Enhanced enrollment – The ERO Enterprise will consider streamlining enrollment for those registered entities that have already had some form of formal review of relevant internal controls. In addition, REs would conduct direct outreach to those registered entities with robust self-reporting that results in regular CEs.

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9 One RE does not have any registered entities in its Self-Logging Program, and another RE has not received any self-logged instances of noncompliance from its participants. Therefore, NERC staff did not have adequate information to evaluate the consistency of these REs’ practices for those portions of the review.
Updated and available documents – The REs will ensure that the process for requesting eligibility is available and understandable by maintaining their updated process documents, log template, and other related documents on their websites.

Finally, the ERO Enterprise is planning a survey in Q2 2017 to program participants to identify additional areas for enhancement.

**Quarterly Enforcement Metrics Highlights**

The following quarterly enforcement metrics updates are current as of the end of Q1 2017 (March 31, 2017).[^10]

**Mitigation Completion**

- There are 53 violations discovered in 2014 and earlier with Mitigation Plans or mitigating activities that are not fully completed. This represents less than 1% of the total violations discovered in 2014 and earlier.

**Caseload**

- The ongoing use of CEs throughout the ERO Enterprise has contributed to a reduction in the time it takes to process noncompliance to less than seven months. This is an all-time low since NERC began tracking this metric; typically, it takes approximately 10 to 11 months to process noncompliance.
- Eighty-five percent of the ERO Enterprise noncompliance inventory is less than one year old and only seven percent is over two years old.
- FRCC, NPCC, RF, and Texas RE have completed processing of all violations with discovery dates prior to 2014.
- There are 47 pre-2014 violations remaining to be processed across MRO, SERC, SPP RE, and WECC. Fifteen of these violations are from federal entities.

**Self-Assessment and Self-Identification of Noncompliance**

- Historically, registered entities self-identify noncompliance in approximately 80% of new issues discovered. The self-identification rate went up to 89.9% in Q1 2017.

**Disposition of Noncompliance**

- NERC filed four Full NOPs[^11] in Q1 2017. Two cases involved vegetation contacts for affiliated entities and together provided a holistic view into the parent company’s enhancements to its vegetation management programs to remediate the violations. These cases included two serious risk and one moderate risk violation. The combined penalty for these cases for the three violations was $290,000.

  One case involved a load shedding event, which combined with a negative compliance history and the significance of the entity involved to the reliability of the area in which the event occurred, elevated the penalty amount for two moderate risk violations. The penalty in this case for two violations was $205,000.

  The last case involved the disposition of four moderate risk Operations and Planning Reliability Standard violations. In this case the violations were due to a network equipment outage that caused a 75-minute loss of system monitoring. The penalty in this case for four violations was $70,000.

[^10]: Appendix A includes the NERC enforcement metrics-related graphs and charts.
[^11]: Full NOPs generally include noncompliance that poses a serious or substantial risk to the reliability of the BPS, including those involving extended outages, uncontrolled loss of load, cascading blackouts, vegetation contacts, systemic or significant performance failures, intentional or willful acts or omissions, and gross negligence. Full NOPs may also be appropriate for a registered entity that has a large number of minimal or moderate risk violations that could be indicative of a systemic issue, dispositions involving higher than typical penalty amounts, or those with extensive mitigation or “above and beyond” actions taken by the registered entity. Full NOPs are approved by NERC and filed with FERC for review and approval.
• Out of 177 instances of noncompliance posing a minimal risk to the reliability of the BPS processed during the first quarter of 2017, the ERO Enterprise disposed of 163 (92%) as CEs. The ERO Enterprise processed the remaining instances of noncompliance posing a minimal risk as FFTs and Spreadsheet NOPs (SNOPs).

Vegetation-Related Transmission Outages
The ERO Enterprise monitors all categories of vegetation-related outages that could pose a risk to the reliability of the transmission system, and, although the overall number of vegetation contacts remains small, there has been an increase in the number of contacts over the time NERC has been tracking them. The increase has been primarily due to vegetation “fall-ins” to the right-of-way, which are not necessarily due to noncompliance with NERC Reliability Standards related to vegetation management. The ERO Enterprise will continue to monitor these matters and enforce any noncompliance appropriately. Data regarding vegetation-related outages in 2016 is available in the 2016 Annual Vegetation-Related Transmission Outage Report.\textsuperscript{12}

\textsuperscript{12} Vegetation-related outage information is consolidated on a delayed quarterly basis. Information related to Q1 2017 will be available in Q2 2017.
Chapter 2: Compliance Assurance

Compliance Monitoring Oversight
Risk-based compliance monitoring and enforcement supports the ERO Enterprise mission to identify, prioritize, and assure effective and efficient mitigation of risks to the reliability and security of the BPS.\textsuperscript{13} To support this mission and the ERO Enterprise’s goal to have an objective and risk-informed compliance monitoring program, NERC uses a risk-based approach to prioritize and identify oversight activities that focus on compliance monitoring throughout the year. NERC’s 2017 oversight is focused on risks associated with two primary areas: monitoring of reliability and security risk and registered entity compliance with NERC Reliability Standards, and internal control implementation. Additionally, oversight activities will evaluate consistency of compliance monitoring implementation across the ERO Enterprise.

NERC is also monitoring RE compliance with specific sections of the NERC ROP and conducting continuous monitoring designed to identify potential risks and changes that could affect the effectiveness of CMEP implementation. These oversight and monitoring activities assess program implementation effectiveness, as well as inform ongoing ERO Enterprise staff training, industry outreach and education, and other opportunities for program improvements.

Monitoring of Reliability and Security Risk and RE Compliance with NERC Reliability Standards
NERC oversight activities, such as audit observations and sampling completed IRAs and Compliance Oversight Plans, address risks and objectives around the following:

- Whether compliance monitoring activities, such as audits, are conducted in a manner that provides reasonable assurance of registered entity compliance with the NERC Reliability Standards, and the testing and conclusions are technically justified and documented;
- Whether compliance monitoring is prioritized and scoped based on reliability and security risks to the BPS; and
- Whether compliance monitoring is consistent in approach across the ERO Enterprise.

During Q1 2017, NERC began initial oversight activities by selecting RE audits to observe and develop a sample of IRAs to review. For 2017, these oversight activities would determine whether evidence and supporting documentation provides a reasonable and technical justification for RE conclusions and whether entity-specific risks inform scope of monitoring and testing performed during the audit. For example, these activities may involve evaluating compliance with NERC Reliability Standards such as CIP-005 and TPL-001. Observation activities would also identify opportunities to improve consistency, including how REs carry out audit processes for registered entities within the Coordinated Oversight Program for MRREs.

NERC continues to work with the REs in 2017 to conduct a study that identifies the strength of the CIP Version 5 (CIP V5)\textsuperscript{14} remote access controls, the risks posed by remote access-related threats and vulnerabilities, and appropriate mitigating controls as directed by FERC in Order 822.\textsuperscript{15} The conclusions from the study will be filed with FERC in July 2017.

\textsuperscript{13} Refer to the Electric Reliability Organization Enterprise Strategic Plan and Metrics for 2017–2020.
\textsuperscript{14} In the context of this report, “CIP V5” encompasses the following NERC CIP Reliability Standards: CIP-002-5.1a; CIP-003-6; CIP-004-6; CIP-005-5; CIP-006-6; CIP-007-6; CIP-008-5; CIP-009-6; CIP-010-2; CIP-011-2, and CIP-014-1.
\textsuperscript{15} Revised Critical Infrastructure Protection Reliability Standards, FERC Order No. 822, 154 FERC ¶ 61,037.
NERC will also focus on assessing the effectiveness of the CIP-014 standards. NERC will file a report with FERC in Q3 2017 that assesses whether high impact control centers are being addressed by CIP-014-2 and whether the physical security controls applied to critical facilities are effective.

**Internal Controls Implementation**

NERC oversight activities around internal controls will observe how REs review and understand internal controls during CMEP activities and sample completed ICEs. Specifically, NERC will be evaluating the REs’ use of internal control reviews and ICEs to inform compliance monitoring, determining whether the assessments of internal control effectiveness are technically justified and documented, and determining whether audits include gaining an understanding of internal controls and how the registered entity mitigates the risk of noncompliance.

During Q1 2017, NERC selected a sample of ICEs that the REs conducted in 2016. NERC’s review will assess whether auditors are gaining an understanding of registered entities’ internal controls around NERC Reliability Standards, and how they contribute to the mitigation of risk and identification of possible noncompliance.

**Compliance with NERC ROP**

Using a risk-based approach to determine the frequency of review, NERC conducts oversight activities to assess NERC and RE compliance with the NERC ROP.

During Q1 2017, NERC closed out oversight activities related to the following two sections of the NERC ROP:

**RE Completion of Auditor Training**

- NERC validated the completion of ERO Enterprise-required RE auditor and audit observer’s training. NERC sampled audits occurring in 2016 and verified training records for 110 ERO Enterprise staff. NERC noted one deficiency for an audit team member that did not complete a fundamentals-of-auditing course required prior to participating in an audit.

- Training records revealed that although there was only one deficiency out of the entire sample, some ERO Enterprise staff have not had training since their initial completion of auditor training in 2007. NERC and the REs recognize that having staff complete fundamental auditor training at a single point in time may not effectively address the risk of CMEP staff maintaining appropriate auditing skills and competencies. Therefore, NERC and the REs are working toward improving the assessment of education needs and maintenance of continuing education around auditing competencies.

**RE Audits of RCs, TOPs, and BAs Every Three Years**

- NERC validated the completion of audits required for RCs, BAs, and TOPs. Since 2014, NERC noted no exceptions for registered entities requiring audits during that three-year cycle.

- As part of NERC’s ongoing oversight for this requirement, NERC will be working with the REs to document their processes and controls for completing audits at least once every three years for BAs, RCs, and TOPs—ensuring that REs have measures in place to meet this requirement on a continuing basis.

**Continuous Monitoring**

Continuous monitoring consists of NERC staff’s ongoing review of processes and information to evaluate program effectiveness, which informs NERC oversight, staff training, and guidance needs. For example, NERC performs continuous monitoring of audit findings, IRAs, and post-audit feedback surveys.

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16 NERC ROP Section 402.9 and Appendix 4C Section 3.1.5.2

17 NERC ROP Section 403.11.1
During Q1 2017, continuous monitoring activities showed the following:

- Registered entities submitted 13 post-audit surveys for audits initiated in 2016 (11 audits) and 2017 (2 audits). The surveys came from seven of the eight REs.
  - NERC’s review of the post-audit feedback surveys indicated that most registered entities understood the IRA process and how the IRA informed audit scope. Registered entities also noted the RE processes for conducting audits continue to become more effective and efficient. The survey responses indicate opportunities for further education regarding ICE. For example, surveys indicated registered entities want to have a better understanding regarding the timing and availability of ICE, as well as whether their existing activities are suitable for ICE activities. NERC and the REs continue to work on these opportunities under the risk-based compliance monitoring program.

- Although REs completed 18 IRAs during Q1 2017, REs followed legacy processes to close out IRA activities started in 2016. NERC anticipates that the REs would follow the revised ERO Enterprise Compliance Monitoring Guide and IRA Report Summary templates for IRA activities initiated or refreshed during Q2 2017 and forward. The revisions to the IRA process and template will help ensure consistency in approach and overall effectiveness of the risk-based compliance monitoring program.

**Quarterly Compliance Monitoring Updates**

The following quarterly compliance monitoring metrics are current as of the end of Q1 2017 (March 31, 2017):18

**Coordinated Oversight of MRREs**

- The ERO Enterprise developed a common set of procedures for implementing the Coordinated Oversight Program and trained the ERO Enterprise staff on the new procedures.

- The ERO Enterprise is developing industry outreach to provide a better understanding of the Coordinated Oversight Program.

- Eight entities withdrew from the Coordinated Oversight Program. Sixteen additional registered entities opted into the Coordinated Oversight Program, taking the total count of registered entity participation to 220.19 Currently, five new requests for participation in the Coordinated Oversight Program are in the review and approval stage. Refer to Appendix B for additional supporting details on the Coordinated Oversight Program.20

**Compliance Guidance**

- The CCC approved the Nuclear Energy Institute application to become a pre-qualified organization for the purpose of vetting and proposing industry developed Implementation Guidance.

- The ERO Enterprise released the CMEP Practice Guide: Phased Implementation Plans with Completion Percentages.

- NERC endorsed the following two Implementation Guidance documents:
  - TPL-001-4 Standard Application Guide, and
  - TOP-001-3 System Operating Limit Definition and Exceedance Clarification.

- Eight additional proposed Implementation Guidance requests are under review by NERC and the REs.21

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18 Appendix B includes the NERC compliance monitoring metrics-related graphs and charts.

19 This report reflects the total number of registered entities participating in the program regardless of whether the NCR number is unique or identical across the REs.


Reliability Standards Auditing Worksheets (RSAWs)

- NERC posted three final RSAWs for FAC-011-3, TOP-001-3, and TOP-004.
- NERC posted draft RSAW for CIP-013-1.

IRA and ICE Completion

- As of Q1 2017, the REs completed IRAs for all remaining RC, BA, and TOP registered entities, which were part of a 2016 ERO Enterprise goal. At the end of 2016, REs had completed 93 percent of IRAs for these registered entities.

- During Q1 2017, RE progress toward completion of initial IRAs for all registered entities is on track according to regional plans.\(^22\)
  - FRCC, MRO, NPCC, and SPP RE completed their initial IRAs and will continue to conduct IRAs for newly registered entities.
  - Completion plans for the other REs remain unchanged and consider registration changes since June 1, 2016. For the remaining REs, IRA completion plans include SERC and Texas RE by 2017, WECC by 2018, and RF by 2019. Completion plans consider the total number of registered entities, registered functions, risk priorities, and regional resources.

- At the end of Q1 2017, REs completed one ICE and have one additional ICE in progress. REs continue to conduct ICE activities and implement processes for conducting reviews of internal controls during CMEP activities, such as audits.

\(^{22}\) Additional information regarding the percentage of IRAs completed for all registered entities within each RE across the ERO Enterprise and total registered entities as of March 3, 2017, which includes registration changes, such as newly registered entities and deregistered entities is available in Appendix B. REs will continue to prioritize IRA completions based on registered functions and registration changes throughout the year.
Chapter 3: Certification and Registration

Certification
During Q1 2017, NERC and the REs completed one certification review. No new full certifications were completed during this period. There are an additional eight certification reviews planned for the remainder of 2017.

Registration
January 2017 Informational Filing
On January 17, 2017, NERC submitted an informational filing23 as required by FERC’s October 15, 2015, Order24 that accepted NERC’s proposal to remove LSEs as a functional registration category from the NCR. In its Order, FERC directed NERC to provide an update on the process of transferring commercial-related requirements covered by retired NERC Reliability Standard INT-011, and conduct a follow-up analysis to assess whether the removal of LSEs affects TOPs’ and BAs’ ability to conduct accurate next-day studies.25

In response to FERC’s first directive, NERC provided an update confirming that LSEs’ commercial accountability in interchange transactions will be covered by the North American Energy Standards Board (NAESB) development of WEQ-004-1 after the retirement of INT-011-1. To prepare a response to FERC’s second directive, NERC worked with three of the BAs26 with the largest percentage of deactivated and deregistered LSEs. This work confirmed that the calculation of next-day studies does not require input from former LSEs and that these BAs cannot attribute changes in load forecasting error to the removal of LSEs from the NCR.

Q1 2017 Registration Changes
From January 1, 2017, through March 31, 2017, there have been 104 registration changes, including 52 activations and 52 deactivations. Of the 52 deactivations, 23 were due to sale of generation assets to another registered entity, ten were due to facility shut-downs, nine were due to compliance responsibility being assumed by another registered entity, three were due to consolidation to a mutually-owned registered entity, three were determined to be UFLS-Only Distribution Providers, two were due to BES Exception approval, one was due to determination of not meeting the NERC registration criteria, and one was due to the findings of a NERC-led panel. NERC verifies registration change activity by monitoring the REs and reviewing documentation relating to changes to the registry.

In March 2017, the NERC-led review panel decided on two Distribution Provider requests for deactivation in the SPP RE footprint. The NERC-led review panel is currently convening over four other cases and expects to render decisions in Q2 2017.

25 Id. at Ordering Paragraph (B).
26 The BAs NERC examined for the informational filing also operate as the TOPs in their footprint.
Appendix A: Enforcement

CMEP Metrics
Mitigation Completion Status
Mitigation of the oldest violations (dating from 2014 and earlier) is over 99% complete. NERC Enforcement continues to monitor these violations and make them a priority for mitigation completion. For violations discovered in 2015, the target has already been accomplished. Additionally, violations discovered in 2016 are being mitigated at a satisfactory rate and the target should be accomplished by the end of 2017.

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Required Mitigation</th>
<th>On-going</th>
<th>Progress Toward Goal</th>
<th>Threshold</th>
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</tr>
</thead>
<tbody>
<tr>
<td>2014 and Older</td>
<td>9508</td>
<td>53</td>
<td>99.44%</td>
<td>99%</td>
<td>100%</td>
<td>0.13%</td>
</tr>
<tr>
<td>2015</td>
<td>725</td>
<td>40</td>
<td>94.48%</td>
<td>85%</td>
<td>90%</td>
<td>4.48%</td>
</tr>
<tr>
<td>2016</td>
<td>1124</td>
<td>679</td>
<td>39.59%</td>
<td>70%</td>
<td>75%</td>
<td>18.43%</td>
</tr>
</tbody>
</table>

Age of Noncompliance in ERO Inventory
This graph below shows the age of noncompliance from all non-federal entities as well as federal entities beyond the November 2014 cutoff.\(^{27}\) There has been almost no change in the distribution of the percentages from the prior quarter.

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\(^{27}\) The U.S. Court of Appeals for the District of Columbia Circuit ruled that monetary penalties could not be imposed on federal entities. All previously reported federal entity violations were formerly on hold pending the court’s decision. The pre-court case federal entity violations and the post-court case violations have been separated for the purpose of these metrics because routine processing was interrupted.
Appendix A: Enforcement

Average Age of Noncompliance in the ERO Enterprise Inventory
The average age of noncompliance in Q1 2017 was 6.9 months.\textsuperscript{28} The average age has not been this low since NERC began tracking the average age of noncompliance.\textsuperscript{29} Typically, noncompliance has a relatively consistent average age in RE inventories of approximately 10 to 11 months.

![Average Age of Noncompliance in the ERO Enterprise’s Inventory](image)

\footnotesize{Average Age of Noncompliance in the ERO Enterprise’s Inventory
*Excludes violations that were held by appeal, a regulator or a court

Figure A.2: Average Age of Noncompliance in the ERO Enterprise Inventory

New Noncompliance Discovered in 2017
The number of new noncompliance has continued to increase steadily in Q1 2017. This increase in new noncompliance is likely due to the July 1, 2016 enforceable date for several new Reliability Standards. Over 72% of all newly discovered noncompliance involved these newly enforceable Reliability Standards.

<table>
<thead>
<tr>
<th>Discovery Month</th>
<th>FRCC</th>
<th>MRO</th>
<th>NPCC</th>
<th>RF</th>
<th>SERC</th>
<th>SPP RE</th>
<th>Texas RE</th>
<th>WECC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>27</td>
<td>34</td>
<td>24</td>
<td>23</td>
<td>33</td>
<td>156</td>
</tr>
<tr>
<td>February</td>
<td>1</td>
<td>9</td>
<td>27</td>
<td>17</td>
<td>23</td>
<td>44</td>
<td>87</td>
<td>167</td>
<td>208</td>
</tr>
<tr>
<td>March</td>
<td>6</td>
<td>1</td>
<td>12</td>
<td>20</td>
<td>14</td>
<td>3</td>
<td>41</td>
<td>70</td>
<td>167</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>7</td>
<td>27</td>
<td>74</td>
<td>65</td>
<td>50</td>
<td>108</td>
<td>190</td>
<td>531</td>
</tr>
</tbody>
</table>

Table A.2: Noncompliance Discovered in 2017

For MRREs participating in the coordinated oversight program, noncompliance is accounted for in the LRE statistics, but may actually affect assets in the Affected RE’s (ARE’s) regional footprint.

\textsuperscript{28} 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.

\textsuperscript{29} The ERO Enterprise began tracking the age of noncompliance in 2013. Only the most recent relevant period starting in 2015 is included.
Noncompliance Discovered Internally Versus Externally

Below are two charts illustrating the internal and external identification of noncompliance by registered entities. Figure A.3 breaks down internal and external discovery method by year, Figure A.4 over the last six quarters. The percentage of internally discovered noncompliance has increased over the last several years.

Figure A.3: Percent of Noncompliance Discovered Internally and Externally by Year

Figure A.4: Percent of Noncompliance Discovered Internally and Externally by Quarter
**Percentage of Self-Logging and CEs**

The percentage of CEs that were self-logged did not change from the previous quarter at 14%.

**Percentage of Self-Logged Compliance Exceptions Since June 2014**

![Pie chart showing 88% non-self-logged and 12% self-logged CEs since June 2014.]

**Figure A.5: Percentage of Self-Logged CEs since June 2014**

**Percentage of Self-Logged CEs Since June 2014**

![Bar chart showing percentage of self-logged CEs by region.]

**Figure A.6: Percentage of Self-Logged CEs since June 2014 by RE**
Use of CEs for Minimal Risk Issues
The charts below review the number of minimal risk noncompliance processed in Q1 2017. Figure A.7 shows the total across the ERO Enterprise by disposition type. Figure A.8 shows the total by RE. Figure A.9 shows the disposition type in Q1 2017 by RE.

**Figure A.7: Minimal Risk Noncompliance Processed in Q1 2017**

**Figure A.8: Minimal Risk Noncompliance Processed in Q1 2017 by RE**
Figure A.9: Disposition Type of Noncompliance Processed in Q1 2017 by RE
Most Violated Standards Discovered in 2017
In addition to having the highest frequency of noncompliance in 2017, CIP-004, CIP-005, CIP-006, and CIP-007 are also among the most violated historically. Additionally, PRC-005, FAC-008, and VAR-002 are also commonly violated. In addition, MOD-025, PRC-019, and PRC-024 were newly effective July 1, 2016 and most REs saw an increase in noncompliance for these Reliability Standards beginning after their mandatory and enforceable date in 2016.

Figure A.10: Most Violated Reliability Standards Discovered in 2017

30 The high frequency of noncompliance for these specific Reliability Standards is primarily due to these Reliability Standards having requirements that apply to large quantities of assets or numbers of personnel, thus resulting in a higher number of potential areas to experience instances of noncompliance.
Vegetation Management
There were ten vegetation-related outages in the second half of 2016 (nine in Q3 and one in Q4). There were 27 outages in 2016, a slight increase over 2015. The majority of these outages were due to weather (25) and most (21) fell within SERC’s regional boundaries. These vegetation-related outages were due to “fall-ins” to the right-of-way. NERC Enforcement believes the combination of tree topography, climate, and weather patterns of SERC’s footprint increase the likelihood of storm-induced vegetation contacts.

Though there has been a slight increase in the total number of vegetation outages, NERC does not believe this is representative of increased risk to the BPS. The number of outages from vegetation contacts still represents a small fraction of the potential vegetation contacts considering the total number of trees and lines. All of the outages were on 230 kV or lower transmission lines, which are the most commonly used lines on the BPS.31

Figure A.11: Vegetation-related Outages by Sustained Outage Category

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31 Vegetation-related outage information is consolidated on a delayed quarterly basis. Information related to Q1 2017 will be available in Q2 2017.
**Violations Posing a Serious Risk**

Since 2010, NERC has gathered data on and regularly monitored violations posing serious risk to the BPS. As shown below, serious risk violations have declined over time and continue to account for a small portion of all instances of noncompliance reviewed by the ERO Enterprise. There were 72 serious risk violations filed in 2016 and two in the first quarter of 2017. The majority of these violations stemmed from four distinct NOPs. The majority of these violations were in NP16-10-000 and NP17-2-000, which had starting dates in Q4 2012.

![Serious Risk Violations by Quarter](image)

**Figure A.12: Serious Risk Violations by Quarter**
Violations with a Measured Reliability Impact
NERC gathers enforcement data using metrics that measure reliability impacts to the BPS. Figure A.13 represents the occurrence dates of noncompliance filed since 2014 that had some observed impact on reliability. This is a quarterly count of the number of noncompliance with observed reliability impact, regardless of the risk assessment. The moving averages provide an indicator of the rate of impactful violations. As shown in Figure A.13, impactful noncompliance appears to be decreasing and is better controlled. The impact chart saw only modest additions in mainly Tier 2 violations. The most recent noncompliance with impact was a single Tier 1 violation with a start date in the second quarter of 2016.

Figure A.13: Noncompliance with Impact by Quarter

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32 Tier 0 observations (no observed impact) are not depicted. Tier 1 are minor impacts of lesser magnitude. Tier 2 are moderate impact noncompliance, such as IROL exceedances or unexpected BES facility trips. Tier 3 violations caused or contributed to a major BES disturbance. Because of the subjectivity inherent in the definitions of observable impacts and the establishment of the tiers, it is expected that the definitions of the tiers will evolve over time based on experience.
Appendix B: Compliance Assurance

Coordinated Oversight Program for MRREs
Figure B.1 represents the percentage distribution of the 220 MRREs by Lead RE (LRE), and Figure B.2 represents the distribution of MRREs by registered function. The registered entities that opted to join the program are registered for various reliability functions in multiple regions.

![Pie chart showing the percentage distribution of MRREs by LRE](image)

**Figure B.1: Percentage of MRREs under Coordinated Oversight by LRE**

![Bar chart showing the registered entities by reliability function](image)

**Figure B.2: Registered Entities from All Reliability Functions in Coordinated Oversight**

3 Each bar represents the number of instances of reliability functions across the ERO for registered entities in the MRRE program.
CIP
The following two charts reflect the noncompliance data on the new CIP V5 NERC Reliability Standards by internal and external discovery methods.

**Figure B.3: Total CIP V5 New Noncompliance Discovered Internally and Externally**

**Figure B.4: Total CIP V5 New Noncompliance by Reliability Standard and Discovered Internally or Externally**
ERO Enterprise Completion of Initial IRAs
The chart below identifies the number of IRAs completed by each RE. Since beginning the assessments, the REs have completed 912 IRAs for the 1,471 registered entities as of Q1 2017. The ERO Enterprise completed IRAs for approximately 62 percent of the total number of registered entities. NERC and REs anticipate registration changes that will affect overall IRA completion for registered entities. As such, IRA activities will be prioritized and consider registered functions and registration changes to ensure IRAs are completed.

![Number of Registered Entities and IRAs Performed](image)

**Figure B.5: RE Completion of IRAs**

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34 The 1,446 registered entities is based on registration data as of March 3, 2017.
35 Certain of the registered entities are MRREs. As such, until the LRE completes the IRA for that entity, the numbers do not update for the AREs. Therefore, some of the entities included in Figure B.5 are being counted twice until their IRAs are completed.
Appendix C: Registration

The following charts depict Q1 2017 registration change activity by RE and by function.

Figure C.1: Registration Change Activity by RE and Total Q1 2017 Changes

<table>
<thead>
<tr>
<th></th>
<th>FRCC</th>
<th>MRO</th>
<th>NPCC</th>
<th>RF</th>
<th>SERC</th>
<th>SPP RE</th>
<th>Texas RE</th>
<th>WECC</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deactivations</td>
<td>4</td>
<td>0</td>
<td>12</td>
<td>11</td>
<td>7</td>
<td>4</td>
<td>7</td>
<td>7</td>
<td>52</td>
</tr>
<tr>
<td>Additions</td>
<td>0</td>
<td>14</td>
<td>5</td>
<td>9</td>
<td>9</td>
<td>2</td>
<td>9</td>
<td>4</td>
<td>52</td>
</tr>
</tbody>
</table>
The following table shows the basis for Q1 2017 registration changes. NERC seeks justification from each RE when approving registration change activity.

<table>
<thead>
<tr>
<th>Basis of Change</th>
<th>Deactivations</th>
<th>Additions</th>
</tr>
</thead>
<tbody>
<tr>
<td>BES Exception Approval</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Compliance Responsibility Assumed by Another Registered Entity</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Consolidated to Another Mutually-owned</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Determined to be UFLS-only Distribution Provider</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Facility Shut Down</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Sold to Another Registered Entity</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>NERC-led Panel Deactivation</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Determined to not Meet Registration Criteria</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Compliance Monitoring and Enforcement Program

Q1 2017

Sonia Mendonça, Vice President, Deputy General Counsel, and Director of Enforcement
Andrea Koch, Senior Director of Reliability Assurance

Compliance Committee Open Meeting
May 10, 2017
• Four Notices of Penalty involving vegetation management, load shedding, and loss of system monitoring were filed.
• The Electric Reliability Organization (ERO) Enterprise alignment regarding approaches to penalties, risk assessment, and mitigation continues:
  ▪ Guidance, training, and review of case studies.
• The Self-Logging process review concluded and next steps are underway:
  ▪ Streamlining of processes, and
  ▪ Additional outreach.
The Petition to FERC for enhancements to Self-logging Program and Compliance Exceptions was filed:
- Eliminates public posting of self-logged Compliance Exceptions, and
- Allows moderate Compliance Exceptions.

Joint annual review with FERC staff of Find, Fix, Track, and Report and Compliance Exceptions is underway.

Mitigation completion rates remain an area of focus:
- Over 99% of violations discovered in 2014 and prior have been mitigated.

The average age of violation in inventory is under seven months.

Self-identification of violations increased to 89.9%. 
• Inherent Risk Assessment Completion:
  ▪ Completed for all Balancing Authorities, Transmission Operators, and Reliability Coordinators.

• Internal Controls Implementation:
  ▪ Focus on enhancing processes for conducting reviews of internal controls during Compliance Monitoring and Enforcement Program (CMEP) activities, such as audits.
• Multi-Region Registered Entities (MRREs) Participant Survey
• ERO Enterprise Procedure for MRRE’s in Coordinated Oversight
• Data Submittal Schedule
• Coordinated Oversight MRRE Frequently Asked Questions
• The Nuclear Energy Institute was approved as a pre-qualified organization.

• Implementation Guidance
  ▪ 18 Endorsed, 7 Non-Endorsed, and 4 Open

• CMEP Practice Guides
  ▪ Phased Implementation Plans with Completion Percentages

• How to Develop Implementation Guidance Webinar

• Inventory of Implementation Guidance Under Development

• Retired Implementation Guidance Webpage Update
CIP Activities

- High percentage of CIP Version 5 possible non-compliance self-identified
- Remote access study
- Physical Security effectiveness report
- Emerging Technology Roundtable
- Industry Outreach
Questions and Answers