

The logo for NERC, consisting of the letters "NERC" in a bold, black, sans-serif font. Below the letters is a horizontal blue bar.

NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

# NERC Compliance Monitoring and Enforcement Program

## 2009 Annual Report

to ensure  
the reliability of the  
bulk power system

May 2010

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## Table of Contents

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<b>1. Executive Summary .....</b>	<b>1</b>
<b>2. Introduction and Background.....</b>	<b>5</b>
<b>3. Best Practices and Lessons Learned.....</b>	<b>6</b>
3.1 Improved Processing of Compliance Monitoring Activities.....	6
3.2 Improvements in Enforcement and Mitigation .....	7
3.3 Most Violated Standards Analysis .....	7
3.3.1 Completed Analyses.....	8
3.3.2 Analyses in Progress.....	9
3.4 Lessons Learned.....	9
3.4.1 Improved Communication.....	10
3.4.2 Staff Re-alignment .....	10
3.5 Regional Entity Audit Program.....	12
<b>4. State of CMEP and Actively Monitored List.....</b>	<b>13</b>
4.1 Compliance Monitoring Activities.....	13
4.2 Status of Regional Compliance Program .....	15
4.3 Regional Workshops Activities.....	15
4.4 Compliance Violations Statistics .....	16
<b>5. Major Issues Identified from 2009.....</b>	<b>19</b>
5.1 Compliance Education and Training Initiatives.....	19
5.2 Industry Education Opportunities / Internal Compliance Program .....	19
5.3 Critical Infrastructure Protection (CIP) .....	20
5.4 Consistency and Uniformity.....	21
5.5 Continuing Communications and Sharing Lessons Learned.....	21
5.6 Registration .....	21
5.7 Enforcement .....	22
5.8 CVI / System Events .....	22
5.9 Multi-Region Registered Initiatives .....	23
5.10 Joint Registration Organization Activity .....	23
5.11 Nuclear Regulatory Commission MOU Brightline Status .....	23
<b>6. NERC Staff Activities .....</b>	<b>24</b>
6.1 Compliance Enforcement .....	24
6.2 Critical Infrastructure Protection.....	25
6.3 Events Analysis and Investigations .....	25

## Table of Contents

---

6.4 Standards Initiatives.....	25
6.5 Compliance Operations Key Initiatives .....	26
6.6 Organization Registration & Certification.....	27
6.7 Auditor Training Activities .....	27
6.8 Crowe Audit and Three-Year Assessment .....	27
6.9 NERC Regional Entity Audits .....	28

## 1. Executive Summary

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As 2009 came to a close and NERC entered into its third full year as the entity responsible for developing and enforcing compliance with mandatory Reliability Standards, the Compliance Monitoring and Enforcement Program (CMEP) continued to mature. 2009 was a year of great progress in the implementation of the CMEP. Based on the 2009 implementation plan<sup>1</sup>, the NERC Rules of Procedure (RoP)<sup>2</sup>, and respective Regional Delegation Agreements (RDAs)<sup>3</sup>, NERC and the eight Regional Entities carried out effective and efficient monitoring and enforcement activities that are required to improve the reliability of the Bulk Electric System (BES).

In 2009, 384 compliance audits were conducted, and a total of 53 Critical Infrastructure Protection (CIP) spot checks<sup>4</sup> were completed, as required by the implementation plan<sup>5</sup>. The Regional Entities are on schedule with the three and six-year compliance audit plans as required. NERC continued moving toward strategic monitoring of selected “actively monitored” Reliability Standards as part of the 2009 Implementation Plan enabling completion of the audit workload, thus helping with the CMEP implementation and contributing to the reliability of the BES. Communication and collaboration improved between NERC and the Regional Entities during 2009 with the move toward more active participation of NERC staff on various regional committees and working groups.

NERC and the Regional Entities made substantial headway on streamlining enforcement processing and focusing both NERC and Regional Entity resources on the cases that most significantly impacted reliability. As of December 31, 2009, NERC had 1,950 active violations, the majority of which were being assessed and validated; others were in settlement negotiations, or were being addressed in a Notice of Penalty (NOP) filing with the Federal Energy Regulatory Commission (FERC). During 2009, NERC filed 221 enforcement actions with FERC. Enforcement actions are designed to ensure and improve BES reliability by mitigating risk, ensuring transparent, efficient and fair processing, and communicating Lessons Learned to the industry. In addition to the normal processing of enforcement actions, NERC submitted to FERC an “Omnibus” filing<sup>6</sup> that resolved 564 violations, including a number of older, minor violations.

NERC has made great contributions to improvements in monitoring process activities. This includes creating templates and matrices for CMEP processes that assist the staff in handling the tracking and follow-up associated with compliance activities, and it improves the rigor,

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<sup>1</sup> The 2009 NERC CMEP Implementation Plan can be found at:

[http://www.nerc.com/files/2009\\_NERC\\_CMEP\\_Implementation\\_Plan\\_final.pdf](http://www.nerc.com/files/2009_NERC_CMEP_Implementation_Plan_final.pdf)

<sup>2</sup> The NERC RoP can be found at: <http://www.nerc.com/page.php?cid=1|8|169>

<sup>3</sup> RDAs can be found at: <http://www.nerc.com/page.php?cid=1|9|119|181>

<sup>4</sup> The number of audits and spot checks are based upon the number of registered entities with unique NCR ID#'s that underwent compliance audits or spot checks in 2009. The number of Regional Entities audit teams that may have attended a compliance audit or spot check has no bearing on the total.

<sup>5</sup> See Section 4.1.2 - *2009 Compliance Audit Schedule* of the *2009 NERC CMEP Implementation Plan*

<sup>6</sup> The FERC Order dealing with this Omnibus Filing, 129 FERC ¶ 61,119 *Order On Omnibus Notice of Penalty Filing* (2009), is available at: <http://www.ferc.gov/eventcalendar/Files/20091113153317-NP10-2-000.pdf>

consistency, and efficiency of the audits. The Regional Entities are also providing advance notifications to the registered entities to allow a thorough review of all supporting evidence of compliance and to ensure the entities have appropriate time to complete the NERC Reliability Standards Audit Worksheet (RSAWs) and pre-audit questionnaires. NERC and the Regional Entities also completed a full set of revised RSAWs<sup>7</sup> in an invaluable step toward consistency and transparency.

The NERC Board of Trustees Compliance Committee (BOTCC) encouraged NERC and the Regional Entities to conduct analyses for the most frequently violated standards. The primary purpose of these analyses is to provide information on compliance that includes reasons for violations and identification of process enhancements and Lessons Learned to assist registered entities in improving compliance. NERC and the Regional Entities have completed and posted analyses for PRC-005-1, CIP-004-1 and FAC-008/009 out of the top-ten most violated standards<sup>8</sup>.

NERC continues to improve its oversight activities, and in 2009 implemented a plan for auditing the Regional Entities' CMEP implementation plans pursuant to Rule 402.1.3 and Appendix 4A of the RoP. NERC partnered with an independent firm to perform the Regional Entity Audit Program; four Regional Entity audits were conducted in 2009. Preparation for the NERC Audit of Regional Entities' implementation plans of the RDA was a successful effort in that it enabled the Regional Entities to perform a detailed self-assessment. In addition, NERC Compliance Operations staff conducted 39 observational audits<sup>9</sup> and identified 56 findings that help to improve consistency, transparency, and efficiency of compliance processes for enhanced BES reliability. NERC is developing stakeholder communications such as bulletins, notices, Best Practices, and Lessons Learned to provide information to the Regional Entities and the registered entities.

In 2009, NERC and the Regional Entities continued with registration enhancements. Entities were registered and joint registrations were established; one Region conducted an inventory of the generator facilities and transmission elements that met the NERC Statement of Compliance Registry Criteria. Progress was also made in establishing the Nuclear Power Plant Bright-line to establish FERC and Nuclear Regulatory Commission (NRC) jurisdictional delineation of Systems Structures and Components (SSC) through the creation of an exemption process for certain SSCs from the scope of NERC Standards as provided in FERC Order No. 706-B<sup>10</sup>. By the end of the year a Memorandum of Understanding (MOU)<sup>11</sup> was executed between the NRC and NERC identifying each organization's roles and responsibilities for this requirement.

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<sup>7</sup> The latest RSAWs are available at: <http://www.nerc.com/page.php?cid=3|22>

<sup>8</sup> Violation analyses or Compliance Analysis Reports (CARs) are posted on NERC's website at: <http://www.nerc.com/page.php?cid=3|329>

<sup>9</sup> This number represents only those audit observations that were performed for non-CIP audits. There were an additional 18 audit observations of CIP spot checks that are not included in this number.

<sup>10</sup> See *Order On Clarification* 126 FERC ¶ 61,229 (2009) at: <http://www.ferc.gov/whats-new/comm-meet/2009/031909/E-6.pdf>

<sup>11</sup> The MOU between NERC and the NRC is available at: <http://www.nerc.com/files/NERC-NRC%20MOU%2020091230%20executed.PDF>

Each Region continued to work earnestly to achieve the goals and challenges set as required by the CMEP, NERC's RoP, and the RDA. The Regional Entities were able to maintain a balance of monitoring activities, completing audits as required by the CMEP, enforcement activities, and education and outreach activities. The Regional Entities conducted numerous educational and outreach activities through various forums, including providing 18 reliability and 10 CIP workshops used to promote the development and implementation of the compliance program. Over 4,000 registered entities and other participants were reached through these workshops. These outreach activities provided a mechanism for the registered entities to meet and discuss Best Practices, Lessons Learned, and processes and procedures used for adhering to the NERC Reliability Standards.

Preliminary performance measures<sup>12</sup> indicate that the average number of days for completing mitigation has been steadily decreasing. This trend indicates an improved ability to mitigate violations, which reduces the violation risk potential to BES reliability. Mitigation plan performance measures also show that registered entities promptly mitigated these violations before the plans were submitted to the Regional Entities, indicating the registered entities' commitment to reliability. Self-reporting and self-certifications accounted for over 60 percent of total violations in 2009, which indicates a culture of compliance within the stakeholder community. In addition, the vegetation-related transmission outages that occurred in 2009 reported in accordance with standard FAC-003-1 showed a decrease in Category 1 outages; the number of Category 1 outages dropped to three, as compared to 11 in 2008<sup>13</sup>.

As the program evolves, NERC continues to identify areas of improvements necessary to further the momentum; the program needs to continue to strive and achieve its goals. NERC and the Regional Entities have identified training, education, and communication key initiatives for future years and are developing a comprehensive and coordinated training strategy and program. NERC recognizes that education and training of registered entities is the foundation of an effective compliance program. Registered entities that have a well-designed compliance program that systematically detects reports, corrects, and prevents risks to system reliability have fewer violations and therefore pose a lower overall risk. As the compliance program continues to grow, NERC and the Regional Entities recognize there is a need to re-design the training programs.

A significant challenge in 2009 was the implementation of the CIP standards. This has been an extensive learning effort for the Regional Entities' compliance staffs and the registered entities. Developing and implementing the processes for conducting spot checks of the CIP standards during 2009 required specialized CIP auditors to be added to Region audit teams. The implementation of the CIP standards is expected to provide challenges to both registered entities and Region Compliance staffs.

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<sup>12</sup> See *Compliance Performance Measure Recommendations* at:  
[http://www.nerc.com/docs/compliance/ccc/Draft\\_PMTF\\_Report\\_5.26.2010.pdf](http://www.nerc.com/docs/compliance/ccc/Draft_PMTF_Report_5.26.2010.pdf)

<sup>13</sup> See the *Vegetation-Related Transmission Outage Report: Fourth Quarter 2009* at:  
[http://www.nerc.com/files/4Q2009\\_Vegetation\\_Report-FINAL.pdf](http://www.nerc.com/files/4Q2009_Vegetation_Report-FINAL.pdf)

Through the strengthening of various working groups, NERC and the Regional Entities will work together to maintain consistency and efficiency. NERC continues to make automation developments and process improvements, and are undergoing a current revision to the Regional Delegation Agreements (RDC's), RoP, and the CMEP. The revisions are intended to define clear roles and responsibilities, drive consistency, and promote efficiency.

The Regional Entities and NERC Compliance staff worked diligently together to improve uniformity across all Regional Entity compliance activities, to increase communication and collaboration, and to identify any difficulties encountered in building an effective CMEP. Ongoing monitoring, auditing, tracking of performance and identifying deficiencies in the program are resulting in process improvements at NERC, Regional Entities, and registered entities.

## 2. Introduction and Background

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As 2009 ended, NERC was completing a transition of leadership and a transition of focus. NERC's new vision is to be a leading organization in the expertise of BES reliability, to promote a reliability-learning industry, to build a strong culture of compliance and enforcement, and to be a trusted leader and advocate for reliability. In line with NERC's new vision, the 2009 CMEP Annual Report's focus will be to identify Lessons Learned and Best Practices as well as to identify issues and considerations for the next iteration of the annual implementation plan and actively monitored list.

Each year, the annual report is developed once the program has reached its conclusion, allowing for the evaluation of a full year of program activities. NERC collects this information from the Regional Entities and develops a draft report for review by the Regional Entities, the Compliance and Certification Committee (CCC), and the BOTCC.

This report describes the results and effectiveness of the 2009 Electric Reliability Organization's (ERO) CMEP as implemented by the eight Regional Entities through the RDAs.

### 3. Best Practices and Lessons Learned

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In 2009, NERC and the Regional Entities continued to improve the implementation of the CMEP. Several Best Practices that improve efficiency and effectiveness of compliance identified by the Regional Entities include process improvements in Compliance Monitoring Activities and enforcement and mitigation processing, continued automation of CMEP processes and activities, conducting analyses of the most violated Reliability Standards, improved communication, and resource restructuring. Other contributions to the program include FERC and NERC's conducting audit observations, implementing the Regional Entity Audit Program, and conducting auditor training activities.

#### 3.1 Improved Processing of Compliance Monitoring Activities

Great contributions have been made to process improvements in compliance monitoring activities, including creating templates and matrices for CMEP processes that (1) assist the staff in handling the tracking and follow-up associated with compliance activities; and (2) improve the rigor, consistency, and efficiency of the audits. The Regional Entities are also providing advance notifications to the registered entities to allow a thorough review of the all-supporting evidence of compliance and to ensure the entities have appropriate time to complete the NERC RSAWs and pre-audit questionnaires. NERC and the Regional Entities also completed a full set of revised Reliability Standards Audit Worksheets<sup>14</sup>.

In 2009, NERC and the Regional Entities continued moving toward strategic monitoring of selected "actively monitored" standards, enabling completion of the audit workload. They are also improving individual monitoring processes activities by:

- Using audits to validate the registered entities' self-certification submittals and continuing to review outstanding mitigation plans.
- Assigning a case manager to each audit, investigation, etc. (i.e., Monitoring Processes) in Enforcement so that one individual begins tracking the violation from its inception.
- Adding enhancements to the implementation of the CMEP based on information ascertained from the Feedback Process.
- Revising all Compliance Procedures and Compliance Instructions.
- Maintaining a robust asset list for Transmission assets and Generator assets that are in the Region's footprint.

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<sup>14</sup> The latest RSAWs are available at: <http://www.nerc.com/page.php?cid=3|22>

The Regional Entities have noted improvements by the registered entities—entity preparedness is the key to an efficient and non-burdening audit. The entities are improving the efficiency of the monitoring process by submitting evidence for audits in a PDF, tabbed, and searchable format by standard and requirement so that the tabs take the auditor to the exact location in the document where the entity believes that the requirement is being met.

### 3.2 Improvements in Enforcement and Mitigation

Enforcement actions are designed to mitigate risk associated with violations of Reliability Standards, to ensure transparent, efficient and fair processing, and to communicate Lessons Learned to the industry. Areas of improvement made by NERC and the Regional Entities for enforcement and mitigation in 2009 include:

- An increase in the level of detail included in Notice of Alleged Violations and Proposed Penalty or Sanctions. This change has improved the efficiency of the settlement process.
- A change in the Notice of Dismissal Process to include a detailed dismissal rationale in notification letters, thereby improving the transparency of the process.
- Hiring of a mitigation plan process analyst to focus on improving the efficiency of processing mitigation plans and implementing several new mitigation plan letters that will improve the transparency and formalization of the mitigation plan process.
- Incorporating a defined process for handling Compliance Mitigation Plans, and implementing new “Mitigation Plan Review and Monitoring” instructions that address the Regional Entity’s internal process for review and approval of the registered entities’ submitted mitigation plans.
- Conducting sessions in Regional Entities’ Compliance Workshops specifically addressing the process for developing a mitigation plan for the registered entities.
- Updating the Compliance database to make the mitigation plan forms accessible online for the registered entities.

### 3.3 Most Violated Standards Analysis

The BOTCC has encouraged NERC and the Regional Entities to conduct assessments that analyze the most frequently violated Reliability Standards. The primary purpose of these analyses is to provide information on compliance, including reasons for violations and identification of process enhancements and Lessons Learned to assist registered entities in improving compliance.

### 3.3.1 Completed Analyses

By the end of 2009, NERC and the Regional Entities had completed and posted analyses, otherwise known as Compliance Analysis Reports (CARs), for two of the top-ten most violated Reliability Standards.<sup>15</sup> These two Reliability Standards were:

- PRC-005-1, Transmission and Generation Protection System Maintenance and Testing
- CIP-004-1, Cyber Security - Personnel & Training

Some of the recommendations noted in the respective reports are as follows:

#### PRC-005-1

- Entities subject to standard PRC-005 need to have a documented maintenance and testing plan in place for devices that qualify as protection systems.
- Entities shall ensure that all devices that qualify as protection systems are included in maintenance and testing programs; i.e., batteries are a common item missed on an entity's maintenance and testing program.
- Entities need to strive to complete maintenance and testing programs on schedule and within defined intervals.
- Entities need to verify that testing programs include the appropriate basis of testing to ensure the reliability of the BES.

#### CIP-004-1

- Document and implement a security awareness program to ensure that personnel who have authorized cyber or authorized unescorted physical access receive ongoing reinforcement in sound security practices.
- Entities must establish a cyber security training program to ensure and verify that all employees with access to Critical Cyber Assets, including contractors and service vendors, have had the appropriate training within 90 days of authorization.
- Entities need to ensure and verify that risk assessments on employees with access to Critical Cyber Assets are not only completed within given time frames, but that the assessments focus on appropriate pieces of information.
- Entities need to ensure that appropriate changes are made to access lists upon the termination or transfer of employees from or to areas that contain Critical Cyber Assets, and that the access lists are frequently updated to contain contractors or service vendors.

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<sup>15</sup> All Compliance Analysis Reports (CARs) can be found at: <http://www.nerc.com/page.php?cid=3|329>

### 3.3.2 Analyses in Progress

Compliance analyses are being conducted for the following Reliability Standards:

- CIP-001-1, Sabotage Reporting
- VAR-002-1, Generator Operation for Maintaining Network Voltage Schedules
- PER-002-0, Operating Personnel Training
- FAC-003-1, Transmission Vegetation Management Program

NERC preliminary recommendations are as follows:

#### CIP-001-1

- Entities should prepare one document that contains all requirements of CIP-001-1 and ensure that all employees have access to the document and are made aware of its contents.
- Entities should clearly indicate the appropriate communications strategy in the Sabotage Reporting plans and ensure that employees are trained to act accordingly.
- Entities need to ensure that the proper contacts are maintained and updated to report Sabotage Events with appropriate law enforcement authorities and regulatory agencies.

#### VAR-002-1

- Entities need to establish robust communications procedures to ensure that the Transmission Operator is notified of any and all changes to elements critical in maintaining reactive power and voltage output.
- Entities need to use Automatic Voltage Regulators (AVR) in Automatic mode at all times, unless specifically directed by Transmission Operators.
- Entities need to notify Transmission Operators within the specified time frame when taking the AVR offline or moving it into manual mode.

#### PER-002-0

- Registered entities should ensure that the training objectives specified in Requirements 3.1 - 3.4 are met on an annual basis to satisfy compliance.
- Registered entities should ensure that personnel who perform key roles in operation for the real-time BES have been adequately trained in their tasks or roles.

### 3.4 Lessons Learned

As the CMEP matures, NERC continues to identify areas of improvement necessary to progress the momentum. During 2009, the Regional Entities identified Lessons Learned, and corrective actions were taken to continue improvements with monitoring and oversight activities as described on the following page.

### 3.4.1 Improved Communication

Communication and cooperation between NERC and the Regional Entities improved during 2009, with more active participation by NERC staff on various regional committees and working groups. NERC has been and will continue to communicate with the Regional Entities via various methods including process bulletins and directives. Better communication with NERC as to its expectations on evidence analysis and documents paid off. In 2009, violations were processed in a much more timely fashion, and a large number of violations were completed and closed.

Communication has also improved with the registered entities. The Regional Entities are using webinars to provide timely information and communicate updates concerning CIP and TFE activities. In addition, webinars are being used as an efficient way to communicate the registered entities' expectations surrounding audit activities.<sup>16</sup>

### 3.4.2 Staff Re-alignment

Several Regional Entities have improved the implementation of enforcement activities during 2009 by way of resource re-structuring and increased experience and proficiency. The Regional Entities have successfully separated the compliance audit and enforcement processes or have expanded enforcement activities to include validation and mitigation.

The re-organization of enforcement activities allows for:

- A second, independent compliance review and determination of possible violations discovered to prevent the commingling of enforcement determinations during discovery.
- Individuals to focus on improving the quality, consistency and efficiency of processes in the specific areas.
- A more efficient and more thorough review of findings from compliance audits and other monitoring methods prior to determining and implementing any enforcement actions.

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<sup>16</sup> NERC webinars for 2009 can be found at: <http://www.nerc.com/page.php?cid=1|83|187>

To foster significant consensus-building on difficult compliance and enforcement matters and to improve the quality of the decisions made, the Regional Entities have hired seasoned, experienced and technically knowledgeable compliance and enforcement staff. Also, to support and supplement staff during audits and to provide an effective and efficient method to address the increasing audit workload, the Regional Entities are using independent, exclusive contract auditors with significant industry expertise.

### 3.5 Regional Entity Audit Program

In 2009, NERC implemented its plan for auditing the Regional Entities' CMEP implementation pursuant to Rule 402.1.3<sup>17</sup> and Appendix 4A<sup>18</sup> of the RoP. NERC partnered with an independent auditing firm, Crowe Horwath, LLP (Crowe) to perform the Regional Entity Audit Program. The Crowe endeavor was coupled with NERC staff participating in those areas that required technical subject matter expertise. NERC staff performed assessments in the following three areas: 1) information systems (Regional Entity processes for maintenance and control of data security); 2) audit validation (validation of the results of a compliance audit performed by the Regional Entity on one of its registrants); and 3) financial and budget management (a review of the Regional Entity's financial records).

The following audits were completed in 2009: ReliabilityFirst Corporation, SERC Reliability Corporation, Midwest Reliability Organization, and Northeast Power Coordinating Council, Inc. The remaining Regional Entities subject to CMEP implementation audits for 2010 and 2011, with SPP and TRE audits anticipated for 2010 and FRCC and WECC audits anticipated for 2011. Of the audits performed, deficiencies noted are tracked quarterly by the affected Regional Entity and NERC. NERC also identified several Regional Entities' best practices and plans to post publicly a Best Practice Summary in the second quarter of 2010.

Preparation for the NERC Audits was a thorough effort that enabled each Region to carry out a detailed self-assessment as to its implementation of the CMEP and the procedures and processes it utilized to accomplish its goals.

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<sup>17</sup> The current NERC RoP is located at:

[http://www.nerc.com/files/NERC\\_Rules\\_of\\_Procedure\\_EFFECTIVE\\_20110412.pdf](http://www.nerc.com/files/NERC_Rules_of_Procedure_EFFECTIVE_20110412.pdf)

<sup>18</sup> The current Appendix 4A *Audit of Regional Entity Compliance Programs* of the NERC RoP is located at:

[http://www.nerc.com/files/Appendix4A\\_AuditOfRegionalEntityCompliancePrograms\\_20110101.pdf](http://www.nerc.com/files/Appendix4A_AuditOfRegionalEntityCompliancePrograms_20110101.pdf)

## 4. State of CMEP and Actively Monitored List

### 4.1 Compliance Monitoring Activities

Audit depth increased in 2009 based on the ERO audit staff's increasing facility with the Reliability Standards and audit techniques. Internal consistency in documentation improved during the course of the year, and the Region Audit teams were able to meet timelines.

The audited registered entities communicated through the 2009 survey that Regional Entity Audit staff is prompt, timely, professional and very knowledgeable. The interview and audit process is well-planned, and the audit staff thoroughly reviews evidence and asks the necessary clarifying questions.

Audits, especially for smaller registered entities, continue to take extra effort as registered entities learn to prepare for evidence submittal. Registered entities were cooperative in audits, enforcement actions, and other assessments. Also, the registered entities' general knowledge of NERC Reliability Standards, ways of demonstrating compliance, and the CMEP process appears to be improving.

The Regional Entities completed all planned audits in 2009. A total of 384 Compliance Audits (including spot checks) were conducted by the Regional Entities in 2009 as shown in Figure 1.

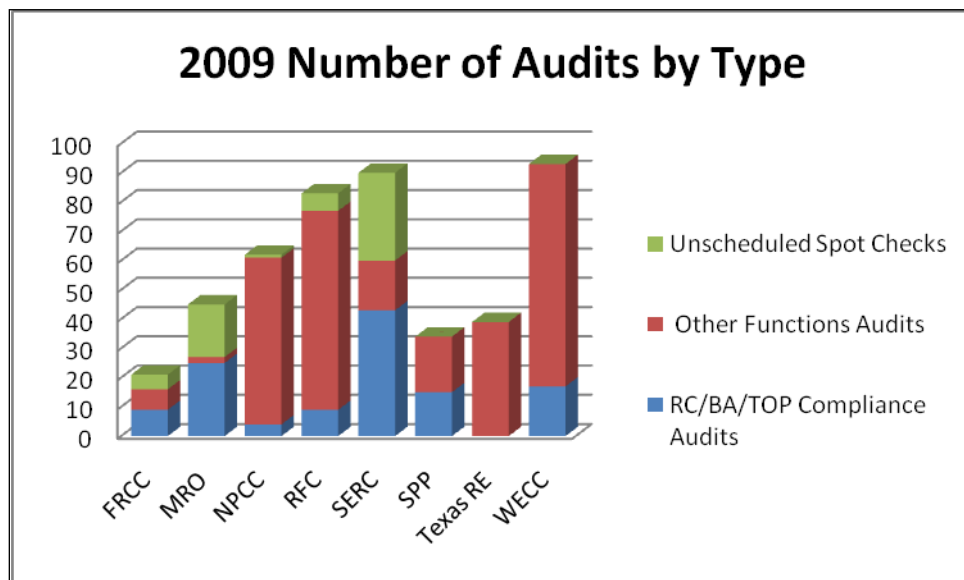
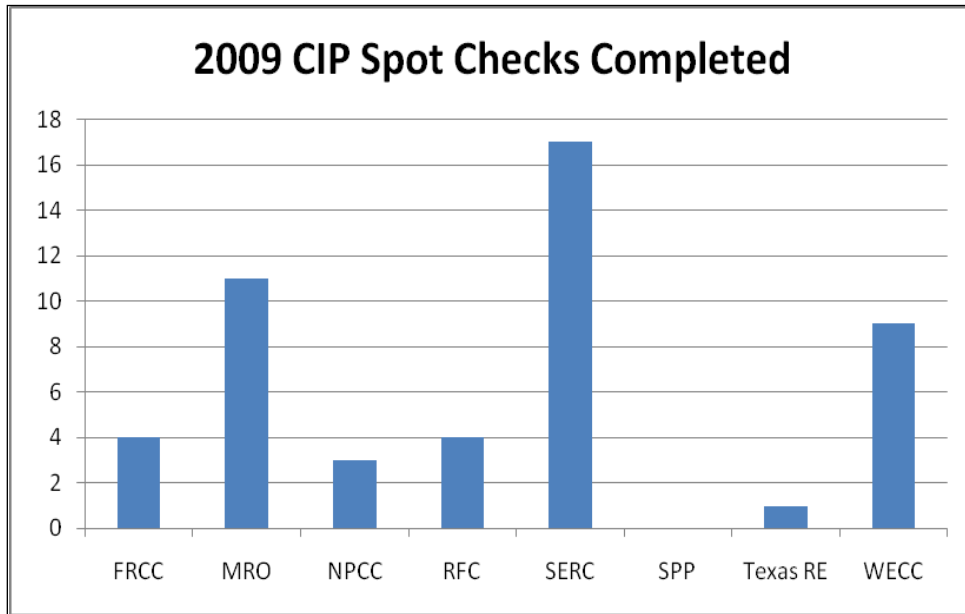


Figure 1: 2009 ERO Compliance Audits and Spot Checks by Region

Spot checks were conducted as outlined in the Region’s Annual Implementation Plan. Additional unscheduled spot checks were conducted resulting from various events, compliance inquiries, and expanded scope of compliance audits.

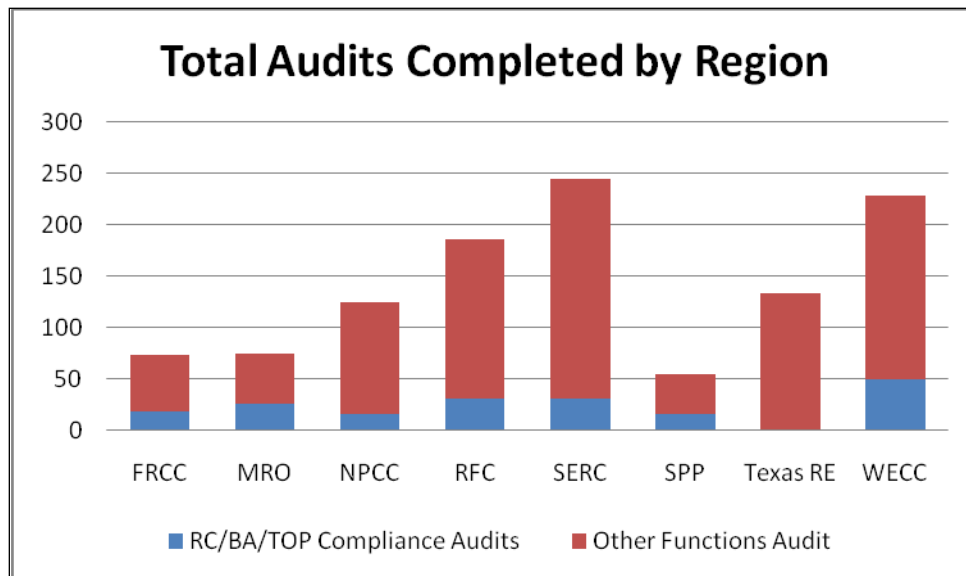
A total of 53 CIP Spot Checks were completed by the Regional Entities in 2009 as shown in Figure 2.



**Figure 2: 2009 ERO CIP Spot Checks by Region**

## 4.2 Status of Regional Compliance Program

To date, the Regional Entities have completed a total of 1,118 Compliance Audits as shown in Figure 3.



**Figure 3: Compliance Audits completed since June 18, 2007 by Regional Entity according to certifiable or non-certifiable functions.**

The first complete 3-year cycle of compliance audits for registered entities performing the RC, BA and TOP functions will be completed on schedule in June 2010. The 6-year audit cycle, which applies only to those registered entities not performing one of the three certified functions, is currently on schedule to be completed by 2013. The Regional Entities are dedicating more resources and are committed to processing all outstanding audit reports as necessary.

## 4.3 Regional Workshops Activities

A total of eighteen Reliability and ten CIP Compliance Workshops were held by the Regional Entities in 2009. These workshops were used to promote the development and implementation of comprehensive compliance programs and also included discussions on key concerns from registered entities. In addition to workshops, Region staffs presented current compliance-related information and ongoing compliance-related activities through various forums and other communication methods, including newsletters, web sites, webinars, seminars, forums, etc. One Region periodically meets with targeted subsets of registered entities to address specific issues and to address questions that may exist. Such outreach activities provide a mechanism for the registered entities to meet and discuss Best Practices, Lessons Learned, and processes and procedures used for adhering to the NERC Reliability Standards.

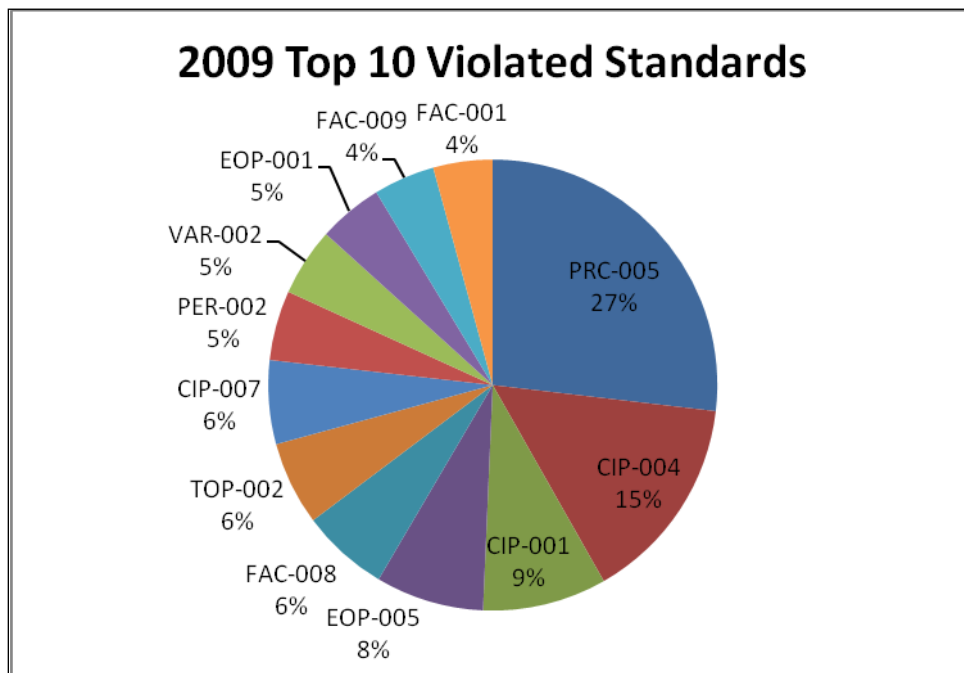
The Compliance Workshops are furthering the goals of improving knowledge of the reliability standards and the CMEP processes. Examples of workshop topics include review of compliance monitoring processes and schedules, preparing for an audit, preparing quality evidence, mitigation plan preparation, NERC alerts, status of Reliability Standards, and demonstrating compliance.

The Regional Entities have received positive feedback regarding the content of these workshops and the accessibility of compliance staffs. Feedback from the workshops continues to be centered on the need for guidance in the interpretation of the standards and what is required to satisfy compliance to the standards.

The Regional Entities have also begun basic training on root-cause analysis, focused at improving the entities' evaluation of what caused non-compliance and how to prevent it in the future. This lessens the likeliness of possible violations and improves the quality of mitigation plans.

#### 4.4 Compliance Violations Statistics

Figure 4 displays the top-ten Reliability Standards violated during the 12-month period ending 12/31/2009. These are all based on a submissions date to NERC between 1/1/2009 and 12/31/2009, and all are enforceable. Figure 5 goes further and does a breakdown of the top-three violated Reliability Standards, being CIP-001, CIP-004, and PRC-005, by Region.



**Figure 4: Top 10 Violated Reliability Standards of 2009.**

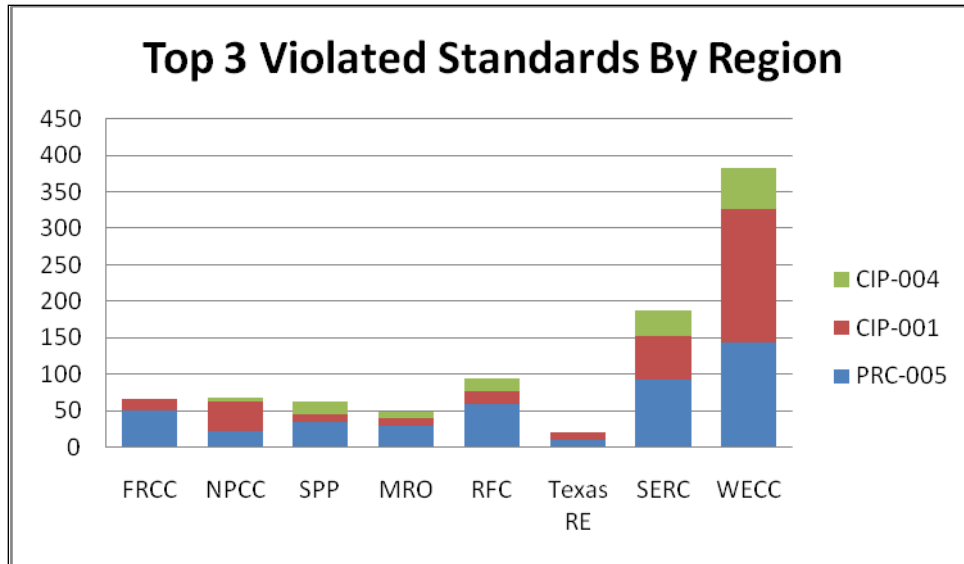


Figure 5: Top 3 Violated Reliability Standards of 2009 by Region.

Figure 6 shows a breakdown of all enforceable violations as of 12/31/2009 by year and compliance monitoring method based on data submitted to NERC.

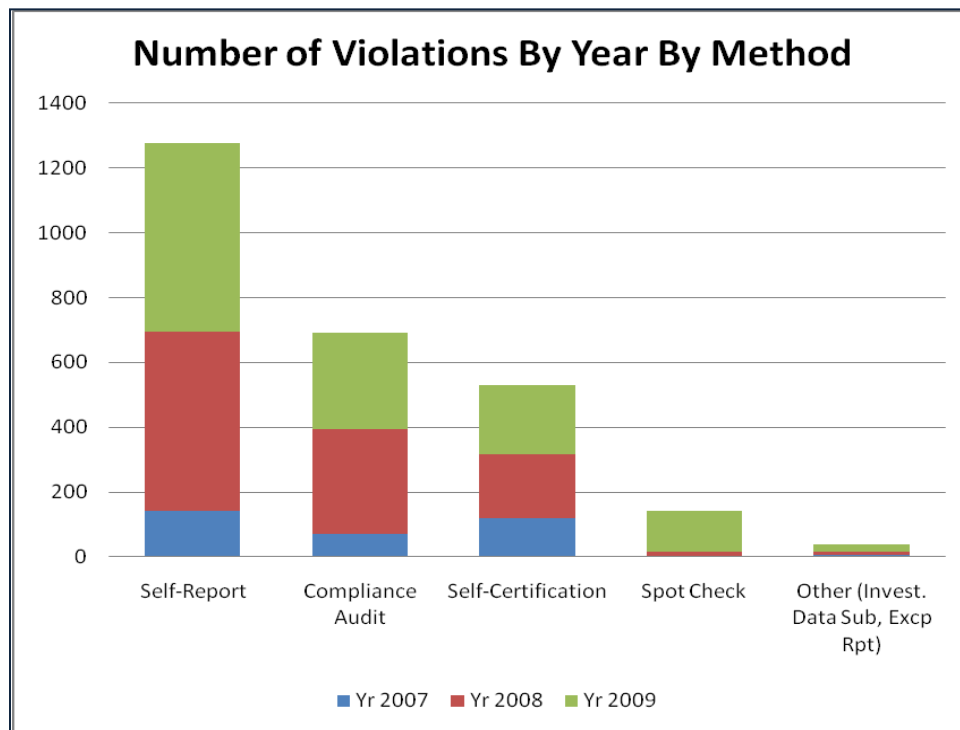


Figure 6: Violations discovered in 2009 by compliance monitoring method.

In 2009, self-reporting and self-certification accounted for over 60 percent of enforceable violations. As the CMEP develops and registered entities become more familiar with the CMEP process, the internal compliance programs of registered entities

will continue to improve, allowing for improvements in violation reporting and the related process.

## 5. Major Issues Identified from 2009

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NERC and the Regional Entities continue to work toward building a strong culture of compliance and have identified necessary initiatives to improve the efficiency and effectiveness the program.

### 5.1 Compliance Education and Training Initiatives

NERC and the Regional Entities have made training, education and communication key initiatives for 2010 (and beyond) and are developing a comprehensive and coordinated training strategy and program among NERC and each Regional Entity. As the Compliance Program continues to evolve in 2010, some of the compliance activities will be new, and existing activities will be refined. The industry and regulators would like to see a re-design in the training programs for NERC and Regional Entities so as to make top professionals accessible and available. The training also needs to be reviewed in detail and will require significant updating based on the proposed changes to the RDA, RoP and CMEP.

### 5.2 Industry Education Opportunities / Internal Compliance Program

NERC and the Regional Entities believe that education and training for registered entities is the foundation of an effective compliance program. Registered entities who have a well-designed compliance program that systematically detects, reports, corrects, and prevents risks to system reliability have fewer violations, and therefore, pose a lesser overall risk—all other factors being equal (size, function, etc.). As registered entities develop a stronger understanding of the approved Reliability Standards and the Compliance Monitoring and Enforcement Program, NERC and the Regional Entities' staffs are hopeful that the bar will be raised each year to improve reliability beyond the plain language of the standards.

A key aspect for training will be evaluating entities' Internal Compliance Programs. In order to properly conduct risk-based approaches, NERC and the Regional Entities must be properly trained on evaluating effective internal compliance programs of registered entities to determine to what degree the program can be relied upon in the context of business. Also, NERC and the Regional Entities recognize that the best way to improve reliability is to educate registered entities on the requirements and measures to mitigate risks to the BES, and assist them in improving internal compliance programs.

The responsiveness and ability to quickly share information with registered entities, coupled with the transparency obtained from education and training initiatives, will ultimately achieve a more effective overall compliance program to enhance system reliability. Regional Entities have concerns about the increased demands on Regional

Entities in today's implementation of the CMEP and would like to foster more learning so that the industry can:

1. Better understand what is required to comply with standards, beginning with the most violated.
2. Better equip registered entities to identify risks to reliability.
3. Establish compliance programs that systematically detect, report, correct and prevent risks to reliability and therefore reduce violations.

### 5.3 Critical Infrastructure Protection (CIP)

Implementation of the CIP standards posed a significant challenge in 2009. Developing and implementing the processes for conducting spot checks of the CIP standards during 2009 required significant effort and education of the Regional Entities' audit staffs. This initiative required specialized (critical infrastructure protection) auditors to be added to each Regional Entity's audit team. The Regional Entities identified several challenges with respect to the implementation of the CIP standards.

Adequately monitoring and enforcing CIP standards and requirements will likely require considerably more technical staff and support staff. Assuring that NERC is adequately resourced is difficult, given the need to assemble and pass budgets while uncertainties exist in regard to what will be expected and what resources will be needed. Even though within two years all the Regional Entities will have extensive assessment and enforcement experience, this area will remain volatile with uncertainty about FERC involvement and the far-reaching scope of the program.

During implementation of the CIP Standards, the following points will likely be discussed and may pose a challenge for both registered entities and the Regional Entities compliance staffs.

- CIP audit implementation in a manner consistent with current processes to ensure consistency.
- The level of evidence required to meet CIP standards; the Nuclear Plant CIP audits and what level of detail will be required on those site visits.
- Addressing and processing TFE submittals.
- Determination of critical assets for effective coverage of the CIP-002 through CIP-009 (CIP) standards. (Results of semi-annual CIP self-certifications with supplemental questionnaires affirmed this issue, while helping to characterize more fully how registered entities view these standards.)
- The fact that further revisions to the CIP standards in the next few years may increase these compliance activities and implementation challenges.

## 5.4 Consistency and Uniformity

The Regional Entities and NERC will continue to work together to build consistency and efficiency and will reduce the duration of resolving such issues through the strengthening of various working groups. The real and perceived inconsistent implementation of the CMEP needs to be addressed in a thoughtful manner that includes specific examples by NERC and the Regional Entities. NERC and the Regional Entities need examples to identify the areas that can be dealt with. The recent joint NERC/Trade Association meetings have helped to identify some specific examples. Open dialogue with the industry is expected to continue throughout 2010 and beyond.

There are still lessons to be learned—the challenge will be to understand where uniformity is necessary, desirable and agreed upon, and to continue to improve. NERC and the Regional Entities are developing a set of compliance performance measures that would be used not only to address the efficiency issue, but also to address other key aspects of CMEP implementation such as consistency, transparency/learning and effectiveness/quality.

## 5.5 Continuing Communications and Sharing Lessons Learned

Regional Compliance staffs have shared Lessons Learned from the NERC RE audit with each other; however, the opportunity to share best practices among Regional Entities is still necessary. NERC and the Regional Entities need to continue an open dialogue and continue working as a team when resolving open issues. The Regional Entities should continue to support NERC to provide direction and help resolve open issues when conflicts exist. Also, NERC should continue to give the Regional Entities adequate time to comment and adjust process changes before implementation. As well, there exists a need for greater use and quicker implementation of guidance documents from NERC that have been vetted within NERC departments and across the Regional Entities for both registered entities and Regional Entities. NERC has begun a process of posting guidance documents on its web site.

## 5.6 Registration

Registration is an ongoing effort, and NERC and the Regional Entities will continue to refine the inventory and add new facilities to the registry as they are identified. Consolidated functional registrations and joint registrations are desirable practices but suggest an increase in the workload that can be expected from registration and certification. Tracking of registration details and other historical information is critical to program success in the long term.

## 5.7 Enforcement

NERC and the Regional Entities continue to improve the enforcement process and have identified additional improvements required.

NERC and the Regional Entities will establish streamlined mechanisms to expedite minor administrative violations and hope to gain more discretion to handle the minor violations that pose no threat to the BES. The current trend of alleged violations has increased and is expected to continue during the planning period. NERC will continue to evaluate and pursue options to streamline violations processing and focus on violations that pose a material risk to BES reliability.

In addition, resources will be required to develop and implement an enforcement process that encourages “good” self-reporting. This enforcement process should result from a systematic compliance “culture” that detects, reports, and correct problems, as well as obtains adequate recognition in the enforcement processes.

NERC and the Regional Entities will use “targeted, aggressive enforcement” for those matters posing the most risk to the BES and for which NERC has clearly indicated a need to focus and to educate the industry on compliance.

The Regional Entities have identified the following challenges in regard to enforcement:

- Consistent application of penalties and sanctions.
- Data requirements for determination of penalty and docket requirements that continue to change. (This needs to be standardized and left alone.)
- Workbook Requirements (data required, etc.) and the transition to electronic reporting of information to NERC.
- The possibility of fewer settlements—and more contested hearings and litigation—due to the increased number of CIP requirements, the new results-based standards process, and changes to registration criteria. This would require considerably more resources.
- The ability of NERC and the Regional Entities to work through hearings on violations and major event investigations and the possibility of these events becoming highly disruptive to ongoing audit and enforcement work.

## 5.8 CVI / System Events

In 2009, Compliance Violation Investigations (CVI) and event-driven compliance inquiries proved difficult to complete at the regional level, in part due to the need for more resources. The Regional Entities have identified challenges in determining what events

that occurred on the BES equate to the need for a more detailed review, as well as understanding the intent and what will be required of them in CVIs. These issues are being addressed in an event analysis process manual being drafted, and in a CVI process document that explains the intent and provides details on NERC's expectations. NERC has also instituted a team leader training course that establishes expectations and methodology.

## 5.9 Multi-Region Registered Initiatives

Based on experience in multi-Regional audits, the Regional Entities vary in the details of conducting audits, but overall methods still adhere to the expectations in the CMEP.

## 5.10 Joint Registration Organization Activity

The registered entities needed significant engagement by NERC and the Regional Entities to move efforts toward successful completion of Joint Registration Organizations (JRO), and handling JRO-related activities—including auditing—proved to be challenging. Joint registrations will complicate assessment particularly over multiyear audit periods.

## 5.11 Nuclear Regulatory Commission MOU Brightline Status

Progress was made in establishing the Nuclear Power Plant "Brightline" requirement. This requirement established FERC and NRC jurisdictional delineation of Systems Structures and Components (SSC) through the creation of an exemption process for certain SSCs from the scope of NERC Standards as provided in FERC Order No. 706-B. By the end of 2009 a Memo of Understanding (MOU) was executed between the NRC and NERC identifying the roles of each and responsibilities to meet this requirement.

## 6. NERC Staff Activities

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NERC priorities include productivity, transparency of information, trust, and incenting compliance. In addition to creating transparency and consistency with the Regional Entities, building the reliability and security of the BES, and providing workshops and training, NERC's goals in the compliance area are to:

- Monitor registered entities for compliance with mandatory reliability standards, in accordance with the CMEP.
- Enforce compliance with mandatory reliability standards by registered entities in accordance with the CMEP while improving quality and timeliness.
- Ensure timely and thorough mitigation of all violations of mandatory reliability standards.
- Provide feedback and instruction to help Regional Entities and registered entities perform successfully.

Ongoing monitoring, auditing, tracking of performance and identifying deficiencies in the program are resulting in process improvements at NERC, Regional Entities and registered entities. NERC will continue to improve the program on an ongoing basis.

### 6.1 Compliance Enforcement

As of December 31, 2009, NERC had 1,950 active violations, the majority of which were being assessed and validated; others were in settlement negotiations, or were being addressed in a Notice of Penalty (NOP) filing with FERC. During 2009, NERC filed 221 enforcement actions with FERC. Enforcement actions are designed to ensure and improve BES reliability by mitigating risk, ensuring transparent, efficient and fair processing, and communicating Lessons Learned to the industry.

The increase in enforcement actions filed in 2009 compared to 2008 is due to improvements in enforcement processes and procedures made possible by staffing increases and the natural growth in NERC and Regional Entity expertise and experience in compliance enforcement.

NERC made great strides streamlining enforcement processing and focusing both NERC and Regional Entity resources on the cases that most significantly impact reliability. The number of violations processed per month increased 266 percent from the first to the fourth quarter. In addition to the normal processing of enforcement actions, NERC's "Omnibus" filing submitted to FERC resolved 564 violations, several of which were older, minor violations.

NERC and the Regional Entities made substantial headway on streamlining enforcement processing and focusing both NERC and Regional Entity resources on the cases that most significantly impact reliability. NERC will submit a Omnibus filing in 2010 and will work with Regional Entities to further develop streamlined enforcement processing. In particular, NERC has been working on better standardized forms for disposition documents and notices of penalties, and will work to scale record development to the seriousness of each violation.

## 6.2 Critical Infrastructure Protection

During 2009, CIP emerged as a top priority for NERC, the utility industry, and North America. NERC's efforts to improve the physical and cyber security of the BES dovetail with virtually all of the organization's responsibilities, including standards development, compliance enforcement, assessments of risk and preparedness, and disseminating critical information to raise awareness of key issues.

## 6.3 Events Analysis and Investigations

NERC's Events Analysis (EA) team conducts detailed analyses of system disturbances to determine root causes and uncover Lessons Learned from individual events, which are then shared with the industry. NERC also issues expert recommendations for reliability improvements directly to the entities involved after a system disturbance.

Working with teams in each of NERC's eight Regional Entities, NERC experts can analyze between 30 and 100 events each year. Most analyses of disturbances within a region are conducted by the Regional Entities, and analyses of multi-regional events fall under the direction of NERC.

## 6.4 Standards Initiatives

NERC actively pursued three significant standards initiatives in 2009: the results-based initiative aimed at developing higher quality, reliability-focused standards; the overhaul of the critical infrastructure protection standards designed to protect the reliability of the BES from cyber-related impacts; and significant efficiency opportunities through a more effective standards development process.

A team of industry, NERC, and Regional Entity representatives developed a guiding set of principles for improving the development and format of reliability standards based on performance and risk-based methods. This concept of "results-based standards" received widespread support from stakeholders and the NERC Board of Trustees in 2009. In 2010, the concepts will be carried forward by applying them initially to a designated standard, followed by the thoughtful implementation of the results-based

methods to additional projects, and then systematic integration into all standards development activities.

In response to FERC's Order 706 in 2008, NERC aggressively worked through its industry-based drafting team to dramatically improve the scope and effectiveness of its cyber security standards, designated as CIP-002 - CIP-009. In 2009, NERC submitted and FERC approved Versions 2 and 3 of these standards that provided incremental improvement to the original versions approved in 2008. However, the majority of the improvements are embodied in Version 4 of the CIP standards that the team began to develop in the second half of 2009. These standards are on target for completion in 2010.

NERC also produced Version 7 of its Reliability Standards Development Procedure. This version includes an expedited process to develop standards that address urgent cyber and physical security issues and changes the manner in which Violation Risk Factors and Violation Severity Levels are approved. Additional modifications recommended by NERC in its Three-Year Assessment should improve the efficiency of the standards development process and the quality of the standards themselves. Expected to be finalized and approved in mid-2010, the changes mark the most significant upgrade of the development process since its inception nearly eight years ago.

In addition to these key activities, FERC approved several reliability standards in 2009. Most notably, a set of six Available Transfer Capability standards was approved, representing the achievement of one of FERC's top priorities. NERC also received approval for three Facilities Design, Connections and Maintenance Standards, a new Western Electricity Coordinating Council (WECC) regional standard for Automatic Time Error Correction, and five interpretations. Overall, NERC conducted nearly 50 standards ballots, held over 50 public comment periods, and prepared just under 60 regulatory filings in 2009 as it continued work in support of its three-year standards development plan.

## 6.5 Compliance Operations Key Initiatives

Compliance Operations offers different types of notices that provide compliance information about queries and items that arise from the field and the industry. NERC's primary effort is to help the Regional Entities be successful. NERC's Compliance Operations Group assists Regional Entities during audits and develops Compliance Application Notices, Lessons Learned, and Best Practices to support consistency. Other key initiatives Compliance Operations is undertaking include providing a formal feedback loop to the Standards Department, leveraging experts in the Regional Entities and industry to improve training, and drafting an ERO culture of compliance white paper.

NERC Compliance Operations will develop and publish Compliance Application Notices throughout the year as items are identified and developed. A quarterly report will provide a summary of all such notices issued in each quarter. As of the end of the first quarter 2010, NERC Compliance Operations had identified 90 different types of compliance recommendations from 2009 and early 2010 compliance monitoring activities.

## 6.6 Organization Registration & Certification

The NERC Compliance Registry was fully integrated into the Compliance Reporting, Analysis, and Tracking Software (CRATS) program in 2009. The numbers of registered entities increased from 1,872 to 1,881 in 2009; and 143 registered entities were added and 134 removed, primarily because of changes in ownership and registration consolidation of multi-regional registered entities.

The NERC Certification group performed four new certifications of Balancing Authorities (BA) in 2009. In addition, there was one Reliability Coordinator (RC) footprint change for which Certification Reviews were performed. Balancing Authorities, Reliability Coordinators and Transmission Operators all require NERC certification as well as registration due to the critical nature of the functions. The certification process includes a top-down audit to confirm compliance, or prospective compliance, with NERC reliability standards.

## 6.7 Auditor Training Activities

In 2009, a total of 37 NERC and Regional audit team lead staff members attended the Fundamentals of NERC Compliance Audits instructor-led class. In addition, NERC conducted a CIP Standards Training instructor-led course that covered the basic concepts and topics that are the focus of the first 13 required CIP Spot Checks. Ninety-two NERC and Regional Entity staff members attended this course. NERC also continued to offer two online courses: Fundamentals of NERC Compliance Audits for Audit Team Members, and Gathering Quality Evidence—approximately 150 - 200 NERC, Regional staff, and Industry Subject Matter Experts completed the online courses.

## 6.8 Crowe Audit and Three-Year Assessment

NERC contracted with Crowe Horwath LLP in the spring of 2009 to conduct a two-phase audit of the Compliance Monitoring and Enforcement Program. The public process evaluation report and confidential letter to management were completed in December

2009. The public evaluation report<sup>19</sup> contains 63 recommendations. NERC provided its response<sup>20</sup> to the evaluation in March 2010.

NERC was required to submit an assessment of its performance to the Federal Energy Regulatory Commission (Commission) three years from the date of certification as the Electric Reliability Organization. NERC filed the assessment with the Federal Energy Regulatory Commission on July 20, 2009.

In the Three-Year Assessment there were 62 recommendations applicable to the Compliance Department. Twenty-six action items were informational items.

The action plans developed for implementing the Crowe Audit recommendations have been integrated with the action plans of the NERC Three-Year Assessment. Many of the recommendations from the Crowe Audit were self-identified by the NERC Compliance Department during the Three-Year Assessment that was completed in July 2009, the same time the Crowe Audit was initiated.

## 6.9 NERC Regional Entity Audits

For 2010, SPP and TRE are scheduled, with FRCC and WECC scheduled for 2011. NERC will continue to use an independent auditing firm to perform the Agreed upon Procedures (AUP) with NERC staff supplementing areas that require subject matter expertise.

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<sup>19</sup> See *Compliance Enforcement, Registration, and Certification Program: Process Evaluation Report* (2009) at: [http://www.nerc.com/files/Compliance\\_Evaluation\\_Report\\_121509.pdf](http://www.nerc.com/files/Compliance_Evaluation_Report_121509.pdf)

<sup>20</sup> See *Response to Crowe Horwath LLP Process Evaluation Report* (2010) at: [http://www.nerc.com/files/20100326\\_NERC%20Response%20to%20Crowe%20Report%20FINAL.pdf](http://www.nerc.com/files/20100326_NERC%20Response%20to%20Crowe%20Report%20FINAL.pdf)