Compliance Audit Report
Compliance Operations and Planning (FERC Order 693)

Electric Reliability Council of Texas, Inc.
NERC ID # NCR04056

Public Version

Confidential Information (Including Privileged and Critical Energy Infrastructure Information) Has Been Removed

Lead Region: Texas Reliability Entity, Inc. (Texas RE)
Audit Dates: September 14, 2015 - September 23, 2015
Audit Location: Texas Reliability Entity, Inc. offices, Austin, TX
Audit Location: Electric Reliability Council of Texas, Inc. offices, Taylor, TX
Report Date: November 18, 2015
Prepared By: Audit Team Leader
Jurisdiction: United States

Possible Violations Identified: 0
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1.0 EXECUTIVE SUMMARY

Texas Reliability Entity, Inc. (Texas RE) conducted a compliance audit of the Electric Reliability Council of Texas, Inc. independent system operator (ERCOT ISO), NCR04056, in two stages. The first stage was the off-site audit portion that was performed during the week of September 14, 2015 - September 18, 2015 and the second stage was the on-site portion of the audit that was performed on September 21, 2015 - September 23, 2015. At the time of the audit, ERCOT ISO was registered for the functions of Balancing Authority (BA), Planning Authority (PA), Reliability Coordinator (RC), Resource Planner (RP), Transmission Operator (TOP), and Transmission Service Provider (TSP). ERCOT ISO was registered for Coordinated Function Registrations (CFRs), CFR00113, CFR00125, CFR00126, CFR00127, JRO00070, JRO00071, JRO00072, JRO00073, JRO00074, JRO00075, JRO00076, JRO00077, JRO00078, JRO00079, JRO00080, JRO00081, and JRO00082 for the TOP functions. The North American Electric Reliability Corporation (NERC) Reliability Standards that were selected through the appropriate Electric Reliability Organization (ERO) processes for 2015 were reviewed based on ERCOT ISO's registration as a BA, PA, RC, RP, TOP, and TSP.

The charter (or objective) of the audit was to evaluate the set of tools and resources available to control room operators for monitoring system operations and status and the entity's effectiveness communicating with ERCOT and neighboring entities. Determine the entity's approach and program for qualification and ensuring control room operators are qualified. Also, determine if the entity has an effective protection system monitoring program that reflects proper coordination and handling of misoperations. The audit team assessed ERCOT ISO's compliance with NERC Standards and Requirements that best apply to two interconnection-wide or Texas RE Regional risk elements: Monitoring and Situational Awareness and Workforce Capability. These two risk elements were selected by Texas RE from a larger list of known risk areas by associating risk elements' cause and effect with functional registrations and NERC Standards. ERCOT ISO's functional registration, configuration, inherent risk, and internal controls were analyzed to adjust the final scope to fit the specific characteristics of ERCOT ISO with respect to the two selected risk elements. The result of the audit was that ERCOT ISO provided sufficient evidence to satisfy the risk charter for this audit.

The risk charter (or objective) of the audit was the following:

- For the Monitoring and Situational Awareness risk element, the audit team was to evaluate the set of tools and resources available to control room operators for monitoring system operations and status with respect to visibility of conditions, alarms, data refresh rates, redundancy, and procedures for operating during outages of monitoring capability. Next, the audit team was to evaluate use of triage, decision trees, procedures and other aids to decision making. Finally, the audit team was to evaluate use of untrained personnel and unstaffed periods.
- For the Workforce Capability risk element, the audit team was to determine the entity's approach and program for defining required qualifications and ensuring employees are qualified with respect to those requirements (through education, certification, experience, training, testing, monitoring for example). Next, the audit team was to examine initial and continuing qualification methods and programs. Finally, the audit team was to examine the use of teams to apply multiple competencies.

The audit team consisted of 10 representatives and one observer from Texas RE. The audit team reviewed the evidence and documentation provided by ERCOT ISO and conducted interviews with ERCOT ISO's personnel to assess compliance with selected Standards applicable to ERCOT ISO at this time.

There were 12 NERC Reliability Standards included in the Compliance Operations and Planning scope of the audit containing 20 Requirements determined to be in scope for this risk-based audit.
The audit team evaluated ERCOT ISO for compliance with Requirements determined to be in scope based on the 2015 ERO Compliance Monitoring and Enforcement Program (CMEP) Implementation Plan (IP) and the associated compliance processes. The team assessed compliance with the NERC Reliability Standards for the following period: ERCOT ISO’s last audit on October 19, 2012 to September 23, 2015.

ERCOT ISO submitted evidence for the team’s evaluation of compliance with Requirements. The team reviewed and evaluated all evidence provided to assess compliance with Reliability Standards selected as applicable to ERCOT ISO for this audit.

Based on the evidence provided, no findings were noted for the Standards and applicable Requirements within the scope of this audit.

There were no open or recently completed mitigation plans for the NERC registered functions included in the scope of this audit. Therefore, none were reviewed by the audit team.

The Texas RE audit team lead certifies the audit team adhered to all applicable Requirements of the NERC Rules of Procedure (ROP) and CMEP.

2.0 AUDIT PROCESS


2.1 Objectives

All registered entities are subject to audit for compliance with all Reliability Standards applicable to the functions for which the registered entity is registered. The audit objectives are:

- Independently review ERCOT ISO’s compliance with the Requirements of the NERC Reliability Standards that were selected as applicable to ERCOT ISO based on ERCOT ISO’s registered functions included in the scope of this audit
- Validate compliance with applicable NERC Reliability Standards from the 2015 ERO CMEP IP and associated compliance processes
- Evaluate how ERCOT ISO addressed the risk elements associated with this audit’s risk charter
- Validate evidence of self-reported violations and previous self-certifications, confirm compliance with other Requirements of the NERC Reliability Standards, and review the status of associated mitigation plans
- Observe and document ERCOT ISO’s compliance culture

2.2 Scope

The scope of the NERC compliance audit included the NERC Reliability Standards from the 2015 ERO CMEP IP and associated compliance processes. The Standards and Requirements in scope for this audit are listed in Table 1 below:

<table>
<thead>
<tr>
<th>Standard</th>
<th>Title</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>EOP-003-2</td>
<td>Load Shedding Plans</td>
<td>R1, R3</td>
</tr>
<tr>
<td>FAC-014-2</td>
<td>Establish and Communicate System Operating Limits</td>
<td>R5</td>
</tr>
</tbody>
</table>

1 NERC CMEP, paragraph 3.1, Compliance Audits
The audit team did not expand the scope of the audit beyond what was stated in the audit notification package.

2.3 Confidentiality and Conflict of Interest

Confidentiality agreements and code of conduct documentation for the Regional Entity staff are governed by Texas RE’s Delegation Agreement with NERC and Section 1500 of the NERC ROP. ERCOT ISO was informed of Texas RE’s obligations and responsibilities under the agreement and procedures. The work history for each audit team member was provided to ERCOT ISO, who was given an opportunity to object to a team member’s participation on the basis of a possible conflict of interest or the existence of other circumstances that could interfere with an audit team member’s impartial performance of duties. ERCOT ISO had not submitted any objections by the stated objection due date based on the ROP and accepted the audit team member participants without objection. There were no denials or access limitations placed upon this audit team by ERCOT ISO.

2.4 Methodology

Once an audit date was set by Texas RE, ERCOT ISO was sent an audit notification package and the Reliability Standard Audit Work Sheets (RSAWs) for the NERC Standards determined to be in scope. ERCOT ISO provided pre-audit evidence at the time requested, or as agreed upon, by Texas RE. Additional evidence could be submitted until the agreed-upon deadline prior to the exit briefing. After that date, only data or information that was relevant to the content of the report or its finding could be submitted with the agreement of the audit team lead.

The audit team reviewed the documentation provided by ERCOT ISO, requested additional evidence and sought clarification from subject matter experts (SMEs) during the audit. Evidence submitted in the form of policies, procedures, emails, logs, studies, data sheets, etc. was validated, substantiated, and cross-checked for accuracy as appropriate. Where sampling is applicable to a Requirement, the sample set was determined by a specific methodology, along with professional judgment.

Findings were based on the facts and documentation reviewed by the audit team, the team’s knowledge of the Bulk Electric System (BES), the NERC Reliability Standards, and professional judgment. All findings were developed based upon the consensus of the team.

The audit team verbally shared its preliminary results with ERCOT ISO’s management and conducted an exit briefing immediately following the audit with ERCOT ISO.

2.5 Company Profile

ERCOT ISO is a membership-based 501(c)(4) nonprofit corporation, governed by a board of directors and subject to oversight by the Public Utility Commission of Texas (PUCT) and the Texas Legislature. ERCOT ISO’s members include consumers, cooperatives, generators, power marketers, retail electric
providers, investor-owned electric utilities (transmission and distribution providers), and municipal-owned electric utilities. ERCOT ISO manages the flow of electric power to 24 million Texas customers – representing 90 percent of the state’s electric load. As the independent system operator for the region, ERCOT ISO schedules power on an electric grid that connects more than 43,000 miles of transmission lines and over 550 generation units. ERCOT ISO also manages financial settlement for the competitive wholesale bulk-power market and administers retail switching for 7 million premises in competitive choice areas.

2.6 Audit Specifics

Audit Dates: September 14, 2015 - September 18, 2015
Audit Location: Texas RE offices, Austin, TX

Audit Dates: September 21, 2015 - September 23, 2015
Audit Location: ERCOT ISO offices, Taylor, TX

2.7 Audit Participants

<table>
<thead>
<tr>
<th>Audit Team Role</th>
<th>Entity</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit Team Leader</td>
<td>Texas RE</td>
<td>Compliance Analyst 3</td>
</tr>
<tr>
<td>Audit Team Member</td>
<td>Texas RE</td>
<td>Compliance Engineer 2</td>
</tr>
<tr>
<td>Audit Team Member</td>
<td>Texas RE</td>
<td>Compliance Analyst 2</td>
</tr>
<tr>
<td>Audit Team Member</td>
<td>Texas RE</td>
<td>Risk Assessment &amp; Mitigation Analyst 3</td>
</tr>
<tr>
<td>Audit Team Member</td>
<td>Texas RE</td>
<td>Compliance Engineer 1</td>
</tr>
<tr>
<td>Audit Team Member</td>
<td>Texas RE</td>
<td>Compliance Engineer 3</td>
</tr>
<tr>
<td>Audit Team Member</td>
<td>Texas RE</td>
<td>CIP Security Analyst 1</td>
</tr>
<tr>
<td>Audit Team Member</td>
<td>Texas RE</td>
<td>Compliance Analyst 3</td>
</tr>
<tr>
<td>Audit Team Member</td>
<td>Texas RE</td>
<td>Compliance Engineer 3</td>
</tr>
<tr>
<td>Audit Team Member</td>
<td>Texas RE</td>
<td>Compliance Team Lead</td>
</tr>
<tr>
<td>Observer</td>
<td>Texas RE</td>
<td>Manager, Compliance Monitoring</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Entity</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERCOT ISO</td>
<td>Intern – Business Process Controls &amp; Risk</td>
</tr>
<tr>
<td>ERCOT ISO</td>
<td>Business Process Control &amp; Risk Manager</td>
</tr>
<tr>
<td>ERCOT ISO</td>
<td>Lead Corporate Counsel, Federal Policy</td>
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<tr>
<td>ERCOT ISO</td>
<td>Manager, Operations Training</td>
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<tr>
<td>ERCOT ISO</td>
<td>Manager, Operations Planning</td>
</tr>
<tr>
<td>ERCOT ISO</td>
<td>Compliance Analyst, Sr.</td>
</tr>
<tr>
<td>ERCOT ISO</td>
<td>Vice President, Governance, Risk &amp; Compliance</td>
</tr>
<tr>
<td>ERCOT ISO</td>
<td>Manager, Compliance Analysis &amp; Reporting</td>
</tr>
<tr>
<td>ERCOT ISO</td>
<td>Supervisor, System Operations</td>
</tr>
<tr>
<td>ERCOT ISO</td>
<td>Manager, System Operations</td>
</tr>
<tr>
<td>ERCOT ISO</td>
<td>CIP Compliance Lead Advisor</td>
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<tr>
<td>ERCOT ISO</td>
<td>Supervisor, Outage Coordination</td>
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<tr>
<td>ERCOT ISO</td>
<td>Operating Standards Specialist, Sr.</td>
</tr>
<tr>
<td>ERCOT ISO</td>
<td>Compliance Analyst 2</td>
</tr>
<tr>
<td>ERCOT ISO</td>
<td>Internal Auditor Sr. 2</td>
</tr>
<tr>
<td>ERCOT ISO</td>
<td>Supervisor, System Operations</td>
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</tbody>
</table>
3.0 AUDIT RESULTS

3.1 Audit Findings

Based on the results of this audit, no findings were noted for the Standards and applicable Requirements that were included in the scope of this engagement.

The following table summarizes the auditors’ findings for the NERC Reliability Standards reviewed during the audit:

<table>
<thead>
<tr>
<th>Reliability Standard</th>
<th>Rqmt</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>EOP-003-2</td>
<td>R1</td>
<td>NF</td>
</tr>
<tr>
<td>EOP-003-2</td>
<td>R3</td>
<td>NF</td>
</tr>
<tr>
<td>FAC-014-2</td>
<td>R5</td>
<td>NF</td>
</tr>
<tr>
<td>IRO-003-2</td>
<td>R1</td>
<td>NF</td>
</tr>
<tr>
<td>IRO-003-2</td>
<td>R2</td>
<td>NF</td>
</tr>
<tr>
<td>IRO-005-3.1a</td>
<td>R3</td>
<td>NF</td>
</tr>
<tr>
<td>IRO-005-3.1a</td>
<td>R6</td>
<td>NF</td>
</tr>
</tbody>
</table>

The following is a description of several types of possible audit findings. No finding (NF): The audit team did not discover areas of non-compliance based on the evidence presented by the registered entity and reviewed by the audit team. Possible violation (PV): The audit team discovered areas of possible non-compliance based on the evidence presented by the registered entity and reviewed by the audit team. Not applicable (NA): The Requirement did not apply to the registered entity based on the functions which the entity is registered. Examples could be the entity did not possess black start units, SPS, UVLS, etc. Open enforcement action (OEA): At the time of the audit, the registered entity had an open action item regarding the Requirement. Examples of OEAs include an open mitigation plan, self-report, settlement agreement, self-logging, etc. OEA is used when the Requirement had an OEA associated with it and the audit team did not identify new possible violations. In circumstances where an OEA existed for a Requirement, but a new possible violation was identified by the audit team, the possible violation will be included in the audit findings section.
3.2 Other Findings

There were no ongoing or recently completed mitigation plans for the NERC registered functions included in the scope of this audit that had not been previously validated by Texas RE’s staff. Therefore, none were reviewed by the audit team.

4.0 AREAS OF CONCERN AND RECOMMENDATIONS

4.1 Areas of Concern

The audit team did not identify any areas of concern during the audit.

4.2 Recommendations

The audit team did not identify any recommendations during the audit.

5.0 COMPLIANCE CULTURE

ERCOT ISO’s compliance culture survey was reviewed by the audit team. The team performed an assessment of ERCOT ISO’s compliance culture in conjunction with the audit processes. The assessment was accomplished through review of responses to the Internal Compliance Survey questionnaire and additional information gathered during interviews and observations. This included an assessment of factors that characterize vigorous and effective compliance programs including:

- Active engagement and leadership by senior management
- Preventive measures appropriate to the circumstances of the company that are effective in practice
- Prompt detection of problems, remediation of deficiencies, and reporting of a violation

ERCOT ISO was cooperative and attended to the audit team’s concerns and information requests throughout the entire audit process. The organizational structure of ERCOT ISO, the participation during the audit by ERCOT ISO’s personnel, the responses provided to the compliance culture survey, the detailed documentation of procedures and records, the internal self-audits, the demonstrated level of compliance, and the direct observations made by the audit team confirmed a commitment by ERCOT ISO to promote a healthy compliance culture within its organization. The ERCOT Compliance Director’s efforts for this audit were extremely helpful and were well supported by the other managers and SMEs who prepared and participated during the audit process.
5.1 Internal Compliance Program Summary

ERCOT ISO’s internal compliance program (ICP) was described in the general information request response provided by ERCOT ISO for this audit. This survey documented what ERCOT ISO currently has in place for compliance oversight. Summary information pertaining to the compliance culture review of ERCOT ISO is as follows:

1. The ICP was sufficiently documented.
2. The ICP was widely disseminated in the company.
3. The ICP had a named and staffed reliability compliance manager position.
4. The ICP was supervised at a high level in the company.
5. The compliance management staff had independent access to the CEO or Board.
6. The compliance management staff had independence of operation and executive management.
7. The ICP appears sufficiently resourced.
8. The ICP was fully supported by senior management.
9. The ICP was being monitored and updated in a timely manner.\(^3\)
10. The ICP included appropriate and timely training for all relevant staff.\(^4\)
11. The ICP included formal, internal self-auditing for compliance on a set periodic basis.
12. The ICP included disciplinary action for employees involved in violations of the ICP.\(^5\)
13. The ICP included self-assessment and self-enforcement of internal controls to prevent any reoccurrence of violations.

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\(^3\) The audit team requested and examined on-site evidence to verify review has occurred.
\(^4\) The audit team did examine evidence to verify that this training occurred.
\(^5\) The audit team did not request or examine evidence to verify employee disciplinary actions for ICP violations.