



NORTHEAST POWER COORDINATING COUNCIL, INC.
1040 AVE OF THE AMERICAS, NEW YORK, NY 10018 TELEPHONE (212) 840-1070 FAX (212) 302-2782

Compliance Audit Report Public Version

**NSTAR Electric
NCR 07180**

October 6 to October 7, 2009

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

October 13, 2009

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Executive Summary

This final compliance audit report is the public version. Confidential information (including privileged and critical energy infrastructure information) has been redacted from this report. The full final compliance audit report was submitted to the audited entity and NERC.

The on-site compliance audit of NSTAR Electric (NSTAR), NERC ID #NCR07180 was conducted between October 6 and October 7, 2009 for the functional registry as a Transmission Operator (TOP). The audit was completed using data submitted by NSTAR prior to the start of the on-site audit and data provided as a result of questions that arose during the audit. The audit was performed by NPCC to demonstrate compliance within the NPCC footprint.

The audit team evaluated NSTAR's compliance with 21 reliability standards and 85 requirements in the 2009 NERC Compliance Monitoring and Enforcement Program (CMEP). The audit reviewed reliability standards identified in the NERC 2009 Implementation Plan for the period since December, 2007, the last audit, or the monitoring timeframes specified in each reliability standard. Of the 21 standards and 85 requirements audited for the TOP function that NSTAR is registered, 21 standards and 78 requirements were judged to be compliant and 7 requirements were judged to be not applicable.

NSTAR staff provided overviews of each standard, resulting in a clearer understanding of their business model and accelerated the audit process. The evidence provided to demonstrate compliance was well presented and well organized. The audit team would like to thank the NSTAR staff for their support offered throughout the audit.

There were no ongoing or recently completed mitigation plans and, therefore, none were reviewed by the audit team.

Audit Process

The compliance audit process steps are detailed in the NERC CMEP. The NERC CMEP generally conforms to the United States Government Accountability Office Government Auditing Standards and other generally accepted audit practices.

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.¹ The audit objectives are to:

¹ North American Electric Reliability Corporation CMEP, paragraph 3.1, Compliance Audits

- Independently review NSTAR Electric's compliance with the requirements of the reliability standards that are applicable to NSTAR based on NSTAR's registered function of TOP.
- Validate compliance with applicable reliability standards from the NERC 2009 Implementation Plan list of actively monitored standards and additional NERC reliability standards selected by NERC.
- Validate compliance with applicable Regional Standards from the NPCC 2009 Implementation Plan list of actively monitored standards.
- Validate evidence of self-reported violations and previous self-certifications and confirm compliance with other requirements of the reliability standard.
- Review the status of associated mitigation plans.
- Observe and document NSTAR Electric's compliance program and culture.

Scope

The audit included all standards identified in the July 1, 2009 audit letter for the TOP function. The audit was a regularly scheduled audit and no compliance investigations were involved in the audit. The audit was performed by NPCC to demonstrate compliance within the NPCC footprint during the period of June 18, 2007 to October 7, 2009.

Confidentiality and Conflict of Interest

Confidentiality and Conflict of Interest of the audit team are governed under the Delegation Agreement with NERC and Section 1500 of the NERC Rules of Procedure.

The audited entity was informed in advance of the audit that the independent contractors executed confidentiality agreements and code of conduct documentation was in place for the NERC representative and regional entity staff. Work history and conflict of interest forms submitted by each audit team member are on file in the NPCC corporate offices. The audited entity was given an opportunity to object to an audit team member on the basis of a possible conflict of interest or the existence of other circumstances that could interfere with the audit team member's impartial performance of duties. The audited entity accepted the audit team members with no objections.

On-site Audit

NSTAR was provided with a pre-audit request letter identifying the standards and requirements subject to audit. The audit letter was sent to NSTAR more than 60 days in advance of the scheduled audit. This was an on-site audit conducted every three years or as determined to be necessary by the region. NSTAR had not self-reported any violations. NSTAR was registered as a TO, TOP, TP, TSP, LSE and DP in NPCC, but this audit was limited to the TOP function.

In all cases, the auditors requested interviews with NSTAR employees representing subject matter expertise regarding all of the registered functions of NSTAR. These interviews resulted in

data requests that in conjunction with the submitted evidence would provide the auditors with a basis for professional judgment when validating compliance with reliability standards.

Methodology

The auditors prepared reliability standards audit worksheets (RSAWs) to evaluate each standard. The RSAWs are used to ensure consistency and to document evidence of compliance or non-compliance with the standards. All relevant documents are considered and to the extent they form a portion of the audit trail are referenced in the RSAWs.

Audit Overview

An audit overview conference call was held on September 22, 2009 between the NPCC audit team, NERC observer and NSTAR staff. The audit team leader reviewed the team members and noted they had signed confidentiality agreements. A brief explanation of the audit process was given and a proposed schedule and the timelines were discussed. NSTAR was given an opportunity to reject the auditors but accepted the auditors and their credentials for this audit. The group agreed to develop and respond to a list of data requests prior to the team's arrival on-site to allow NSTAR more time to turn around data requests and to allow the audit team to be more prepared during the on-site phase. At the start of the on-site phase of the audit, brief presentations and introductions were made by NSTAR, NERC and NPCC; all parties agreed to the proposed schedule and understood that the schedule was subject to change as the audit progressed.

Audit

Each member, prior to arriving at the site, reviewed all data submitted and produced a list of questions that required subject matter experts' responses. The audit team was broken into two groups with each group pre-assigned to a set of standards. That team then did the on-site questioning and produced the RSAWs for the standard. Some questions were resolved using the data provided in advance of the audit and additional data that was provided on-site, and others were answered by follow-up data submittals during the site visit.

Exit Briefing

The exit briefing was conducted at the NSTAR offices on October 7, 2009. The entire team of NPCC auditors, the NERC observer and the NSTAR senior management and the audit response team members attended. An audit presentation summarized the results of the audit. Of the 21 standards and 85 requirements audited for the functions NSTAR is registered, all standards and 78 requirements were judged to be compliant, 7 requirements were judged not applicable. NSTAR commented that work associated with preparing for the audit and the audit helped them improve their own processes, and the suggestions made would get strong consideration.

Company Profile

NSTAR, a Massachusetts business trust, is an investor owned electric and gas utility headquartered in Boston, Massachusetts. NSTAR Electric is a wholly owned subsidiary of NSTAR serving load in the greater Boston, Plymouth, New Bedford and Cape Cod areas. NSTAR has 946 miles of 345, 230, and 115 KV transmission serving a peak load of 4995 MW. NSTAR does not own any generation.

Audit Specifics

The compliance audit was conducted on October 6 and October 7, 2009 at the NSTAR offices.

NPCC Audit Team Role	Title	Company
Regional staff	Manager Compliance	NPCC-Compliance Audit Program
Lead Auditor	Contracted Consultant	NPCC-Compliance Audit Program
Auditor	Contracted Consultant	NPCC-Compliance Audit Program
Auditor	Contracted Consultant	NPCC-Compliance Audit Program
Auditor	Contracted Consultant	NPCC-Compliance Audit Program

NERC

Title	Company
Regional Compliance Auditor	NERC

NSTAR Electric

Title	Organization
Senior Vice President - Operations	NSTAR
Vice President, Engineering	NSTAR
Vice President, Field Operations	NSTAR
Vice President, Electric System Operations and Transmission Development	NSTAR
Senior Process Analyst – Training	NSTAR
Manager Bulk Power System Operations	NSTAR
Manager Field Engineering	NSTAR
Senior Transmission System Supervisor	NSTAR
Transmission Operator Trainer	NSTAR
Senior Dispatch Supervisor	NSTAR

Manager Corporate Security	NSTAR
Manager Electric Service	NSTAR
Senior Transmission Planning Engineer	NSTAR
Senior Operating Support Engineer	NSTAR
Business Integration Analyst - Electric Service	NSTAR
Senior Transmission Planning Engineer	NSTAR
Manager Control & Protection Engineering	NSTAR
Manager Power System Operations	NSTAR
Admin Assistance – System Planning	NSTAR
Business Integration Analyst - Electric Service	NSTAR
Transmission Systems Supervisor	NSTAR
Team Manager, NIS Systems	NSTAR
Compliance Manager / Director, System Planning	NSTAR
Manager Field Communications	NSTAR
Transmission Systems Supervisor	NSTAR

Audit Results

NSTAR provided electronic files and emails containing data used to demonstrate their compliance with the standards identified in the audit letter from NPCC. When the auditor had additional questions, conference calls were used to request additional documentation until the auditors were convinced that the standards and requirements had been met and NSTAR had demonstrated compliance.

After reviewing all the data, NSTAR was judged to be compliant with 21 standards and 78 requirements and 7 requirements were judged to be not applicable.

Findings

The following table details findings for compliance with the reliability standards listed in the NERC 2009 Implementation Plan.

Reliability Standard	Requirement	Finding
CIP-001-1	R1.	Compliant
CIP-001-1	R2.	Compliant
CIP-001-1	R3.	Compliant
CIP-001-1	R4.	Compliant
COM-001-1	R1.	Compliant
COM-002-2	R1.	Compliant
EOP-001-0	R2.	Compliant

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Reliability Standard	Requirement	Finding
EOP-001-0	R3.	Compliant
EOP-001-0	R4.	Compliant
EOP-001-0	R5.	Compliant
EOP-001-0	R6.	Compliant
EOP-001-0	R7.	Compliant
EOP-003-1	R1.	Compliant
EOP-003-1	R2.	Compliant
EOP-003-1	R3.	N/A
EOP-003-1	R4.	N/A
EOP-003-1	R5.	Compliant
EOP-003-1	R6.	Compliant
EOP-003-1	R7.	N/A
EOP-003-1	R8.	Compliant
EOP-005-1	R1.	Compliant
EOP-005-1	R2.	Compliant
EOP-005-1	R3.	Compliant
EOP-005-1	R4.	N/A
EOP-005-1	R5.	Compliant
EOP-005-1	R6.	Compliant
EOP-005-1	R7.	Compliant
EOP-005-1	R8.	N/A
EOP-005-1	R9.	Compliant
EOP-005-1	R10.	N/A
EOP-005-1	R11.	Compliant
EOP-008-0	R1.	Compliant
IRO-001-1	R8.	Compliant
IRO-004-1	R3.	Compliant
IRO-004-1	R4.	Compliant
IRO-004-1	R7.	Compliant
IRO-005-1	R8.	Compliant
IRO-005-1	R12.	N/A
IRO-005-1	R13.	Compliant
PER-001-0	R1.	Compliant
PER-002-0	R1.	Compliant
PER-002-0	R2.	Compliant
PER-002-0	R3.	Compliant
PER-002-0	R4.	Compliant
PER-003-0	R1.	Compliant
PRC-001-1	R1.	Compliant

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Reliability Standard	Requirement	Finding
PRC-001-1	R2.	Compliant
PRC-001-1	R3.	Compliant
PRC-001-1	R4.	Compliant
PRC-001-1	R5.	Compliant
PRC-001-1	R6.	Compliant
TOP-001-1	R1.	Compliant
TOP-001-1	R2.	Compliant
TOP-001-1	R3.	Compliant
TOP-001-1	R5.	Compliant
TOP-001-1	R6.	Compliant
TOP-001-1	R7.	Compliant
TOP-001-1	R8.	Compliant
TOP-002-2	R1.	Compliant
TOP-002-2	R11.	Compliant
TOP-002-2	R16.	Compliant
TOP-002-2	R17.	Compliant
TOP-002-2	R18.	Compliant
TOP-002-2	R19.	Compliant
TOP-004-1	R1.	Compliant
TOP-004-1	R2.	Compliant
TOP-004-1	R3.	Compliant
TOP-004-1	R4.	Compliant
TOP-004-1	R5.	Compliant
TOP-006-1	R2.	Compliant
TOP-006-1	R6.	Compliant
TOP-006-1	R7.	Compliant
TOP-007-0	R1.	Compliant
TOP-007-0	R2.	Compliant
TOP-007-0	R3.	Compliant
TOP-008-1	R1.	Compliant
TOP-008-1	R2.	Compliant
TOP-008-1	R3.	Compliant
VAR-001-1	R1.	Compliant
VAR-001-1	R2.	Compliant
VAR-001-1	R7.	Compliant
VAR-001-1	R8.	Compliant
VAR-001-1	R9.	Compliant
VAR-001-1	R10.	Compliant
VAR-001-1	R12.	Compliant

Compliance Culture

The audit team reviewed NSTAR Electric's compliance culture. During all contacts, NSTAR staff was professional in their approach to compliance and understood the importance of the compliance and its role in maintaining reliability. Compliance responsibility is distributed to SME's across the organization and focused up through the Reliability Compliance Manager, who then reports up through the VP of Operations and up to the SVP of Operations. NSTAR may want to consider making the compliance group more independent of the departments responsible for performance of the reliability standards.