



NORTHEAST POWER COORDINATING COUNCIL, INC.
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Operations and Planning Compliance Audit Report Public Version

New Brunswick Power Corporation

NBCR001

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

Date of Audit: August 30, 2016 to November 25, 2016

Audit Period: October 1, 2013 to October 12, 2016

Date of Report: January 3, 2017

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Executive Summary

The Northeast Power Coordinating Council (NPCC) is a recognized compliance body in New Brunswick and assists the New Brunswick Energy and Utilities Board (EUB) with compliance monitoring functions in the Province.

Northeast Power Coordinating Council (NPCC) conducted an off-site Operations and Planning compliance Audit of New Brunswick Power Corporation (NB Power), ID NBCR001 from the Initial Audit Briefing conducted on August 30, 2016 to the Audit Exit Briefing conducted on November 25, 2016.

The audit was previously identified in the 2016 Annual Audit Plan – Appendix 2 to the New Brunswick 2016 Annual Implementation Plan (AIP). The functions being audited were that of Distribution Provider (DP) function.

NB Power is also registered with the NBEUB for the following functions: Balancing Authority (BA), Generator Owner (GO), Generator Operator (GOP), Interchange Authority (IA), Load Serving Entity (LSE), Planning Authority (PA), Purchasing-Selling Entity (PSE), Reliability Coordinator (RC), Resource Planner (RP), Reserve Sharing Group (RSG). Transmission Owner (TO), Transmission Operator (TOP), Transmission Planner (TP), and Transmission Service Provider (TSP). Those functions were not included in the scope of this audit.

The Audit team evaluated NB Power for compliance with eight (8) standards and nineteen (19) requirements in the 2016 NB AIP. The team assessed compliance with the NBEUB approved NERC Reliability Standards, for the period of October 1, 2013 to October 12, 2016. NB Power 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 applicable to NB Power at this time. Based on the evidence provided, the team's findings are summarized in Table 1 below:

	No Finding	Possible Violation	Open Enforcement Action*	Not Applicable	Total
Reliability Standard Requirements	10	0	2	7	19

*OEs with newly identified PVs are counted in the PV column only; not in the OEA column. OEAs without newly identified PVs are counted in the OEA column.

The team notified NB Power of zero Areas of Concern and zero (0) Recommendations.

The findings included in this report are the same as the findings presented to NB Power during the Exit Briefing. The findings are further explained in the Audit Findings section and the Findings table of the report. The Findings table includes information of the team's findings of applicability and compliance to the NBEUB approved NERC Reliability Standards within the scope of the Audit. Possible Violations will be processed in accordance with the NB Reliability Standards Regulation-Electricity Act (Reliability Standards Regulation).

The NPCC Audit team lead certifies that the team adhered to all requirements of the Reliability Standards Regulation, NERC Rules of Procedure (ROP) and NERC Compliance Monitoring and Enforcement Program (CMEP), as applicable.

Audit Process

The compliance Audit process steps are detailed in the Reliability Standards Regulation which is based on the NERC ROP and CMEP and generally conforms to the Government Auditing Standards and other generally accepted audit practices. The New Brunswick Energy and Utilities Board ("EUB") has authorized the Northeast Power Coordinating Council ("NPCC") to conduct this Compliance Audit as provided for under Section 122 of the Electricity Act and according to the EUB "Preliminary Notice of Off-Site Audit" that was sent on July 6, 2016.

Objectives

All registered entities are subject to compliance assessments with all reliability standards applicable to the functions for which the registered entity is registered as per the Reliability Standards Regulation. The Audit objectives are to:

- Review compliance with the requirements of reliability standards that are applicable to NB Power, based on the DP function;
- Validate compliance with applicable reliability standards from the 2016 NB AIP list of actively monitored standards and additional NBEUB approved NERC Reliability Standards selected by NPCC and the EUB;
- Validate evidence of self-reported violations and previous self-certifications;
- Observe and document NB Power's compliance program and culture;
- Review the status of open mitigation plans. (There were none)

Scope

The scope of the Compliance Audit included the NBEUB approved NERC Reliability Standards from the NPCC 2016 NB AIP. The Audit team verified that NB Power had no mitigation plans or remedial action directives that were open during the Audit. The team expanded the scope of the Audit beyond what was stated in the notification package, adding PRC-008-0, R1 and R2.

Confidentiality and Conflict of Interest

Confidentiality and conflict of interest of the Audit team are governed under the Reliability Standards Regulation, the EUB-NPCC Service Contract, the NPCC Delegation Agreement with NERC and Section 1500 of the NERC Rules of Procedure. NB Power was informed of NPCC's obligations and responsibilities relating to confidentiality and conflict of interest under these governing documents. The work history for each team member was provided to NB Power,

which 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 a team member's impartial performance of duties. NB Power had not submitted any objections by the stated 15-day objection due date and accepted the team member participants without objection. There were no denials or access limitations placed upon this team by NB Power.

Methodology

The Audit team reviewed the evidence submitted by NB Power and assessed compliance with requirements of the applicable reliability standards. NPCC provided NB Power with a Request for Information (RFI) prior to commencement of the Audit. NB Power provided pre-Audit evidence at the time requested, or as agreed upon, by NPCC. 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 documentation provided by NB Power and requested additional evidence and sought clarification from subject matter experts during the Audit. Evidence submitted in the form of policies, procedures, emails, logs, studies, data sheets, etc. were validated, substantiated, and cross-checked for accuracy as appropriate. Where sampling was applicable to a requirement, the sample set was determined by a statistical methodology, along with professional judgment.

Findings were based on the facts and documentation reviewed, 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.

Company Profile

New Brunswick Power Corporation (NB POWER)

NB POWER is a vertically integrated utility located in the province of New Brunswick. NB POWER owns and operates 12 generating facilities to serve 3,060 MW (2016 winter peak) of internal load. NB POWER owns and operates nearly all of the transmission and distribution system to serve an estimated 394,000 customers within the province. The NB POWER subsidiary called New Brunswick Energy Marketing facilitates all energy transactions with our adjacent interfaces including New England, Quebec, Northern Maine, Nova Scotia and Prince Edward Island.

NB POWER is broken down into the following divisions:

NB Power Corporate provides strategic direction, governance and support to the divisions for communications, finance, human resources, legal and governance.

Distribution and Customer Service is designated as the standard supplier, responsible for securing adequate capacity and energy to meet our customers' needs in New Brunswick. The distribution system consists of 178 substations which are connected by 20,815 km of

distribution lines operating at a system voltage of 12.47 kV. The distribution system supplies approximately 72% of the in province load where the remaining 28% are industrial customers directly connected to the transmission system.

Generation operates 11 plants in New Brunswick with an installed net capacity of 2,853 MW which is broken down to 1,439 MW of thermal, 889 MW of hydro and 525 MW of combustion turbine. Generation supplies approximately 75 per cent of in province load.

Nuclear operates and maintains one CANDU 6 - 705 MW reactor at the Point Lepreau Generating Station (PLGS). The plant provides approximately 25 per cent of New Brunswick 's electrical energy requirements.

The Transmission & System Operator division maintains and operates 49 terminals that are interconnected by over 6,849 km of transmission lines with system voltages of 69 kV, 138kV, 230kV and 345 kV. The New England interface consists of two 345kV lines which electrically connect New Brunswick to the Eastern Interconnection. New Brunswick is also synchronously connected to a portion of Northern Maine, Nova Scotia and Prince Edward Island. The Quebec interface consists of two HVDC stations which provide an asynchronous connection.

The Distribution and Customer Service division of NB POWER is the owner of the DP assets. Distribution and Customer Service does have DP assets that are connected to the 138kV transmission system. In these cases, the DP owns the distribution substation up to and including the high side disconnect switch on the primary side of the distribution transformer. These connections to the 138kV transmission system are radial and only serve load. By exclusion E1 of the BES definition, the DP does not own any BES elements.

Audit Participants

Following is a list of all personnel from the NPCC Audit team and NB Power who were directly involved during the meetings and interviews.

NPCC

Role	Title	Entity
Audit Team Lead	Manager, Compliance Monitoring	NPCC
Primary Auditor	Lead Auditor	NPCC
Team Member	Lead Auditor	NPCC
Observer	Compliance and Enforcement Coordinator	NBEUB

NB POWER

Title	Entity
Director of Corporate Compliance	New Brunswick Power Corporation
Engineer, Corporate Compliance	New Brunswick Power Corporation
Director of Engineering	New Brunswick Power Corporation
Manager of Transmission and Distribution Maintenance	New Brunswick Power Corporation
Distribution System Performance Engineer	New Brunswick Power Corporation
Distribution System Apparatus Engineer	New Brunswick Power Corporation
Senior System Operator	New Brunswick Power Corporation
Document and Compliance Coordinator	New Brunswick Power Corporation

Audit Findings

The following information details the compliance findings for the reliability standards and requirements identified in the scope of this Audit.

Standard	Req.	Finding
COM-001-2	R7.	No Finding
COM-001-2	R11.	No Finding
EOP-004-2	R1.	No Finding
EOP-004-2	R2.	Not Applicable
EOP-004-2	R3.	No Finding
EOP-005-2	R11.	Not Applicable
PRC-005-1.1b	R1.	Not Applicable
PRC-005-1.1b	R2.	Not Applicable
PRC-005-2(i)	R1.	No Finding
PRC-005-2(i)	R2.	Not Applicable
PRC-005-2(i)	R3.	No Finding
PRC-005-2(i)	R4.	Not Applicable
PRC-005-2(i)	R5.	No Finding
PRC-006-NPCC-01	R4.	No Finding
PRC-006-NPCC-01	R5.	Not Applicable
PRC-006-NPCC-01	R7	No Finding
PRC-008-0	R1.	Open Enforcement Action
PRC-008-0	R2.	Open Enforcement Action
TOP-001-1a	R4.	No Finding

Recommendations

The Audit team identified and informed NB Power of zero (0) Areas of Concern and zero (0) Recommendations.

Compliance Culture

The NPCC Audit team performed an assessment of NB Power's compliance culture in conjunction with the Audit process. The NB Power audit team provided an expeditious turnaround of all audit material and data requests. Their preparation and understanding of the compliance audit process was evident throughout the off-site audit.

The NPCC audit team would like to thank the NB Power audit preparation team and the subject matter experts for their cooperation and for providing the pre-audit material and the off-site audit requests in a timely manner.