



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

Operations and Planning Compliance Audit Report Public Version

**Canadian Hydro Developers Inc.
New Brunswick Energy and Utilities Board Compliance
Registry NBCR002**

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

**Date of Audit: July 23, 2015 to November 13, 2015
Audit Period: October 1, 2013 to September 15, 2015
Date of Report: December 3, 2015**

Table of Contents

Executive Summary.....	1
Audit Process	2
Objectives	2
Scope	2
Confidentiality and Conflict of Interest	3
Methodology	3
Company Profile	3
Audit Participants	4
Audit Findings	5
Recommendations	6
Compliance Culture.....	7

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 (NBEUB) with compliance monitoring functions in the Province.

Northeast Power Coordinating Council (NPCC) conducted an Operations & Planning compliance Audit of Canadian Hydro Developers Inc. (CHD), NBCR002, which began on July 23, 2015, with the Initial Audit Briefing, and concluded with the Audit Exit Briefing on November 13, 2015. At the time of the Audit, CHD was registered for the functions of Generator Owner (GO) and Generator Operator (GOP).

The table below identifies key Functions performed on behalf of CHD:

Functional Model Interface	Registered Entity NBEUB ID
Reliability Coordinator (RC)	NB Power Corporation (NB Power) – NBCR001
Balancing Authority (BA)	NB Power Corporation (NB Power) – NBCR001
Transmission Operator (TOP)	NB Power Corporation (NB Power) – NBCR001
Planning Authority (PA)	NB Power Corporation (NB Power) – NBCR001
Transmission Planner (TP)	NB Power Corporation (NB Power) – NBCR001
Resource Planner (RP)	NB Power Corporation (NB Power) – NBCR001

The Audit team evaluated CHD for compliance with a total of fourteen (14) standards and forty (40) requirements identified in the New Brunswick 2015 Annual Implementation Plan. The team assessed compliance with the NBEUB approved NERC Reliability Standards for the period of October 1, 2013 to September 15, 2015, the audit materials submission date.

There were no open enforcement actions or mitigation plans at the time of the audit. CHD 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 CHD at this time. Based on the evidence provided, the team's findings are summarized in Table 1 below:

Table 1. Summary of Findings					
	No Finding	Possible Violation	Open Enforcement Action*	Not Applicable	Total
Reliability Standard Requirements	33	4	0	3	40

*OEAs 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 CHD of four (4) Areas of Concern and nine (9) Recommendations.

The findings included in this report are the same as the findings presented to CHD 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).

NPCC certifies that the Audit team adhered to all applicable requirements of the Reliability Standards Regulation, NERC Rules of Procedure (ROP) and Compliance Monitoring and Enforcement Program (CMEP). NPCC is solely responsible for the content of this report. The NPCC Audit Manager has confirmed that the content of this report is true, to the best of his knowledge.

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 conform to the Government Auditing Standards and other generally accepted audit practices.

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 CHD, based on the functions that CHD is registered to perform;
- Validate compliance with applicable reliability standards from the 2015 NB Annual Implementation Plan list of actively monitored standards and additional NBEUB approved NERC Reliability Standards selected by NPCC and the NBEUB;
- Validate evidence of self-reported violations and previous self-certifications;
- Observe and document CHD's compliance program and culture;
- Review the status of open mitigation plans.

Scope

The scope of the compliance Audit included the NBEUB approved NERC Reliability Standards from the 2015 NB Annual Implementation Plan list of actively monitored standards and additional NERC Reliability Standards selected by NPCC and the NBEUB. For this Audit, there was no review of mitigation plans or remedial action directives that were open during the Audit. The team did not expand the scope of the Audit beyond what was stated in the notification package.

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. CHD was informed of NPCC's obligations and responsibilities under the agreement and procedures. The work history for each team member was provided to CHD, 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. CHD 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 CHD.

Methodology

The Audit team reviewed the evidence submitted by CHD and assessed compliance with requirements of the applicable reliability standards. NPCC provided CHD with a Request for Information (RFI) prior to commencement of the Audit. CHD 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 CHD 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, SME conference calls, 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 the documentation that was 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

Canadian Hydro Developers Inc. (CHD) is a wholly owned subsidiary of TransAlta Renewables Inc. (TRI). TransAlta Renewables Inc. owns and operates 12 hydro facilities and 16 wind farms in Western and Eastern Canada and holds an economic interest in the Wyoming Wind Farm and Australian Assets. At June 30, 2015, TRI's generating assets had 1,708 megawatts ("MW") of gross generating capacity in operation. TransAlta Corporation manages and operates these facilities on behalf of TRI under the terms of a Management, Administrative and Operational Service Agreement. TransAlta Renewables Canadian facilities are located in five provinces within Canada; British Columbia, Alberta, Ontario, Quebec and New Brunswick.

Canadian Hydro Developers Inc. has 8 hydro facilities and 6 wind farms in Western and Eastern Canada. The 14 facilities and corresponding region are listed in document "CHD Assets."

TransAlta Corporation manages and operates these facilities as per the Management, Administrative and Operational Services Agreement in place with TransAlta Renewables Inc.

The 96 MW Kent Hills 1 wind facility is comprised of 32, 3.0 MW Vestas V90 wind turbines on 80 meter towers, and is located near Moncton, New Brunswick. This facility began commercial operations in December 2008. The 54 MW Kent Hills 2 wind facility expansion is comprised of 18, 3.0 MW Vestas V90 wind turbines on 80 meter towers. This expansion was commissioned Nov 2010. The wind turbines in Phase 1 and 2 are aggregated to a 34.5/138kV substation through 34.5kV collector lines. The substation is interconnected with New Brunswick Power Corporation (NB Power) by a 138kV transmission line. CHD-Kent Hills owns the substation and does not own the 138kV transmission line.

Audit Participants

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

NPCC Team:

Role	Title	Entity
Audit Team Lead	Lead Auditor	NPCC
Associate Auditor	Lead Auditor	NPCC
Audit Manager	Manager, Compliance Monitoring	NPCC

Canadian Hydro Developers Inc.:

Title	Entity
Compliance Specialist, Gas	TransAlta
Compliance Specialist, Wind & Hydro	TransAlta
Supervisor, Wind Services	TransAlta
Supervisor, Quebec & New Brunswick	TransAlta
Supervisor, Engineering Wind	TransAlta
Engineer, Electrical	TransAlta
Compliance Analyst	TransAlta

New Brunswick Energy & Utilities Board Participants:

Title	Entity
Compliance & Enforcement Coordinator	NBEUB

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-002-2	R1.	No Finding
EOP-004-2	R1.	Possible Violation
EOP-004-2	R2.	No Finding
EOP-004-2	R3.	No Finding
FAC-002-1	R1.	No Finding
IRO-001-1.1	R8.	No Finding
IRO-010-1.a	R3.	No Finding
MOD-010-0	R1.	No Finding
MOD-010-0	R2.	No Finding
MOD-012-0	R1.	No Finding
MOD-012-0	R2.	No Finding
PRC-001-1	R2.	No Finding
PRC-001-1	R3.	No Finding
PRC-001-1	R5.	No Finding
PRC-004-2.1a	R2.	No Finding
PRC-004-2.1a	R3.	No Finding
PRC-005-1.1b	R1.	Possible Violation
PRC-005-1.1b	R2.	Possible Violation
PRC-006-NPCC-1	R13.	No Finding
PRC-006-NPCC-1	R14.	No Finding
PRC-006-NPCC-1	R15.	No Finding
PRC-006-NPCC-1	R16.	No Finding
PRC-006-NPCC-1	R19.	Not Applicable
PRC-006-NPCC-1	R21.	Not Applicable

PRC-006-NPCC-1	R22.	No Finding
PRC-006-NPCC-1	R23.	No Finding
TOP-002-2.1b	R3.	No Finding
TOP-002-2.1b	R13.	No Finding
TOP-002-2.1b	R14.	No Finding
TOP-002-2.1b	R15.	No Finding
TOP-002-2.1b	R18.	No Finding
TOP-003-1	R1.	No Finding
TOP-003-1	R2.	No Finding
TOP-003-1	R3.	No Finding
VAR-002-3	R1.	No Finding
VAR-002-3	R2.	Not Applicable
VAR-002-3	R3.	Possible Violation
VAR-002-3	R4.	No Finding
VAR-002-3	R5.	No Finding
VAR-002-3	R6.	No Finding

Recommendations

The Audit team identified and informed CHD of nine (9) Recommendations. The specific details of each Recommendation are described below.

- FAC-002-1 R1: Document checklist and process for staff awareness.
- PRC-001-1 R3.1: Document process for staff awareness.
- PRC-001-1 R5.1: Document process for staff awareness.
- PRC-004-2.1a R3: Document process for staff awareness.
- PRC-006-NPCC-1 R14: Document process to address the intent of the requirement.
- PRC-006-NPCC-1 R22: Document process to address the intent of the requirement.
- PRC-006-NPCC-1 R23: Document process to address the intent of the requirement.
- TOP-003-1 R3: Document process to address all devices listed in the text of requirement.
- VAR-002-3 R1: CHD should clarify authority and responsibility in VAR control procedure.

Compliance Culture

During all contacts, the CHD representatives were professional and positive in their approach to compliance. All additional information and data requested, including the SME conference calls, was provided and conducted in a timely manner and comprehensive fashion. The NPCC audit team would like to thank the CHD audit team for their willing support offered throughout the audit process.