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Operations and Planning Compliance Audit Report Mandatory Public Version

Direction - Contrôle des mouvements d'énergie, une direction d'HQT (CMÉ)

Régie ID# - NIR001

Date of Audit: June 6, 2016 to June 8, 2016 Audit Period: April 1, 2015 to May 6, 2016.

Date of Report: October 12, 2016

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Executive Summary

Northeast Power Coordinating Council (NPCC) conducted an Operations and Planning compliance Audit of Direction - Contrôle des mouvements d'énergie, une direction d'HQT (CMÉ) ID-NIR001 from June 6, 2016, to June 8, 2016.

At the time of the Audit, CMÉ was registered for the functions of Reliability Coordinator (RC), Balancing Authority (BA), and Transmission Operator (TOP).

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

Functional Model Interface	Registered Entity Acronym
Reliability Coordinator (RC)	CMÉ
Balancing Authority (BA)	CMÉ
Transmission Operator (TOP)	CMÉ

The Audit team evaluated CMÉ for compliance with thirty-one (31) standards and one hundred thirty-two (132) requirements in the 2016 Québec Reliability Standards Compliance Monitoring and Enforcement Program Annual Implementation Plan (2016 Annual Implementation Plan). The team assessed compliance with the NERC Reliability Standards for the period of April 1, 2015 to May 6, 2016 (actual data submittal date) for the RC, BA and TOP functions.

CMÉ submitted evidence for the team's evaluation of compliance with all requirements. The team reviewed and evaluated all evidence provided to assess compliance with reliability standards applicable to CMÉ 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	Potential Non- Compliance	Open Enforcement Action*	Not Applicable	Total
Reliability Standard Requirements	122	1	0	9	132

*OEAs with newly identified Non-Compliances are counted in the Potential Non-Compliance column only; not in the OEA column. OEAs without newly identified Non-Compliances are counted in the OEA column.

The team notified CMÉ of one (1) Areas of Concern and one (1) Recommendation.

The findings included in this report are the same as the findings presented to CMÉ 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 detailed information of the Audit team's findings of applicability and compliance to the NERC Reliability Standards within the scope of the compliance Audit. Potential Non-Compliance will be processed as outlined in the QCMEP. There were no open approved mitigation plans; therefore, the team reviewed none.

The NPCC audit team lead certifies that the Audit team adhered to all applicable requirements of the NERC Rules of Procedure (ROP), the Québec Reliability Standards Compliance Monitoring and Enforcement Program (QCMEP), and the September 24, 2014 Agreement on the implementation of the Québec reliability standards compliance monitoring and enforcement program (September 24, 2014 Agreement).

Audit Process

The compliance Audit process steps are detailed in the QCMEP. NPCC's application of the QCMEP generally conforms with the United States Government Auditing Standards (GAGAS) 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. The Audit objectives are to:

- Review compliance with the requirements of reliability standards that are applicable to CMÉ, based on the functions that CMÉ is registered to perform;
- Validate compliance with applicable Reliability Standards from the 2016 Annual Implementation Plan, list of key areas of focus and additional NERC Reliability Standards selected by NPCC;
- Validate compliance with applicable actively monitored standards and requirements;
- Validate evidence of self-reported non-compliance and previous self-certifications;
- Observe and document CMÉ's compliance program and culture;
- Review the status of open mitigation plans.

Scope

The scope of the compliance Audit included the NERC Reliability Standards from the 2016 Annual Implementation Plan. This Audit did not include a review of mitigation plans or remedial action directives, as none 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 QCMEP and the September 24, 2014 Agreement. CMÉ was informed of NPCC's obligations and responsibilities under the agreement and procedures. The work history for each team member was provided to CMÉ, 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. CMÉ 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 CMÉ.

Methodology

The Audit team reviewed the evidence submitted by CMÉ and assessed compliance with requirements of the applicable reliability standards. NPCC provided CMÉ with a Request for Information (RFI) prior to commencement of the Audit. CMÉ provided pre-Audit evidence at the time requested by NPCC. Additional evidence could be submitted until the agreed-upon deadline prior to the exit briefing. After that date, only data or information deemed relevant to the content of the report or its finding could be submitted with the agreement of the audit team manager.

The Audit team reviewed documentation provided by CMÉ and 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. were validated, substantiated, and cross-checked for accuracy. Where sampling was applicable to a requirement, the sample set was determined by a statistical methodology, along with the use of professional judgment.

Findings were based on the facts and documentation reviewed, the team's knowledge of the electric system, the NERC Reliability Standards and the use of professional judgment. All findings were developed based upon the consensus of the team.

Company Profile

Direction - Contrôle des mouvements d'énergie a division of Hydro-Québec TransÉnergie (CMÉ) is part of Hydro-Québec. Hydro-Québec generates, transmits and distributes electricity, mainly using renewable energy sources, in particular hydroelectricity. It contracts and supervises system development projects. It also conducts research in energy-related fields and takes an active interest in energy efficiency. In addition, it works to create value from the technologies that emerge from its research.

Its sole shareholder is the Québec government. By law, the Generator supplies the Distributor with an annual heritage pool of electricity. Above that volume, the Distributor obtains its supplies on the open markets. Transmission and distribution activities are regulated. The company comprises four divisions: Hydro-Québec Production (HQP) generates and wholesales power on domestic and external markets. Hydro-Québec TransÉnergie (HQT) operates one of the most extensive transmission systems in North America for the benefit of Québec customers. Hydro-Québec Distribution (HQD) operates the distribution system providing Québecers with a reliable supply of electricity. To meet needs beyond the annual heritage pool supplied by HQP, it obtains supplies on open markets. It also works to encourage its customers to make efficient use of electricity. Société d'énergie de la Baie James (SEBJ) and Hydro-Québec Équipement et services partagés, the division under which it operates, manage all aspects of Hydro-Quebec's infrastructure projects such as engineering, procurement and construction.

Hydro-Québec TransÉnergie (HQT) operates one of the most extensive transmission systems in North America. It manages power flows throughout Québec and markets system capacity, while maintaining the North-American standards of reliability. Some 3,400 employees in various specialties contribute to HQT's success. In accordance with North American regulatory provisions through HQ-OATT, HQT ensures non-discriminatory access to Québec's transmission system to all customers on the wholesale market in north-eastern North America. In Québec, HQT's operations are regulated by the Régie de l'énergie (Québec Energy Board), which sets the rates on the basis of cost of service. The Régie also approves HQT's capital investments and terms of service.

HQT is a leader in transmission system design, operation and maintenance. It operates the most extensive transmission system in North America, with more than 33,000 km (20,000 miles) of lines at different voltages. Its fixed assets in Québec total C\$16 billion.

To offer customers a reliable system and transmission services tailored to their needs, HQT has 21 ties with systems within Québec and in neighboring provinces and states, providing a total export capacity of more than 9,700 MW and import capacity of more than 12,000 MW. These facilities allow carrying out interchanges with Newfoundland and Labrador, New Brunswick, Ontario, the U.S. Northeast as well as within Québec. It is to be noted that HQT's system operates asynchronously with its neighboring systems. All ties (outside Québec) are either HVDC ties or with radial generation/load. To reflect this fact, the electric system in the province of Québec has been recognized as the "Québec Interconnection" by NPCC and NERC in 2006.

Audit Participants

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

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

NPCC Team

Observers

Role	Title	Entity
Observer	Directeur general, Planification et réglementation	Régie de l'énergie
Observer	Spécialiste en régulation économique, Équipe - Surveillance de la fiabilité des réseaux	Régie de l'énergie
Observer	Chargé de projets, Équipe - Surveillance de la fiabilité des réseaux	Régie de l'énergie
Observer	NERC Manager, Compliance Assurance	NERC
Observer	Compliance Attorney	NPCC
Observer	CIP Auditor	NPCC

CMÉ Participants

Title	Entity
Ingénieur	Contrôle des mouvements d'énergie
Chef – Expertise de contrôle de	Contrôle des mouvements d'énergie
réseau	
Ingénieur	Hydro-Québec TransÉnergie
Ingénieure	Contrôle des mouvements d'énergie
Chef – Centre de contrôle du	Contrôle des mouvements d'énergie
réseau	
Directeur principal – Contrôle des	Contrôle des mouvements d'énergie
mouvements d'énergie et	et exploitation du réseau
exploitation du réseau	
Conseillère conformité et fiabilité	Bureau de conformité (Compliance
du réseau	office)
Conseillère conformité et fiabilité	Bureau de conformité (Compliance
du réseau	office)
Directeur – Normes de fiabilité et	Bureau de conformité (Compliance
conformité réglementaire	office)
Directeur – Contrôle des	Contrôle des mouvements d'énergie
mouvements d'énergie	
Ingénieur	Contrôle des mouvements d'énergie
Chef – Stratégies Réseau principal	Hydro-Québec TransÉnergie
et interconnexions	
Chef – Normes de fiabilité et	Bureau de conformité (Compliance
conformité réglementaire	office)
Ingénieur	Contrôle des mouvements d'énergie
Ingénieure	Contrôle des mouvements d'énergie

Répartiteur CCR – Équilibre O et D	Contrôle des mouvements d'énergie
Chef – Orientation des	Hydro-Québec TransÉnergie
automatismes	Tryato Quebee transenergie
Ingénieure	Bureau de conformité (Compliance
	office)
Ingénieure	Contrôle des mouvements d'énergie
Chef – Conformité aux normes de	Bureau de conformité (Compliance
fiabilité	office)
Conseillère gestion savoir-faire et	Contrôle des mouvements d'énergie
compétences	
Ingénieur	Contrôle des mouvements d'énergie
Ingénieur	Hydro-Québec TransÉnergie
Ingénieur	Hydro-Québec TransÉnergie
Conseillère conformité et fiabilité	Bureau de conformité (Compliance
du réseau	office)
Chef – Études des automatismes	Hydro-Québec TransÉnergie
Conseillère maintenance	Hydro-Québec TransÉnergie
informatique	
Ingénieur	Contrôle des mouvements d'énergie
Ingénieur	Contrôle des mouvements d'énergie
Ingénieur	Contrôle des mouvements d'énergie
Conseiller conformité et fiabilité	Bureau de conformité (Compliance
du réseau	office)
Ingénieur en électricité	Bureau de conformité (Compliance office)
Ingénieur	Contrôle des mouvements d'énergie
Répartiteur CCR – Transport	Contrôle des mouvements d'énergie
Répartiteur CCR – Interconnexions	Contrôle des mouvements d'énergie
Ingénieur	Hydro-Québec TransÉnergie
Ingénieur	Contrôle des mouvements d'énergie
Ingénieur	Contrôle des mouvements d'énergie
Délégué commercial	Bureau de conformité (Compliance office)
Ingénieur	Contrôle des mouvements d'énergie

Audit Findings

CMÉ Self-Identified 14 issues in 14 Requirements from 9 Standards before the on-site audit review began. Of these 14 issues, one was previously Self-Reported. The other 13 issues were identified after the Notification of Audit Letter was issued. These 13 issues were reported to the Audit Team, and handled as part of the normal audit evidence review process. In addition, the auditors reviewed the previously Self-Reported Issue. The auditors determined that only one of these issues was a Potential Non-Compliance (PNC).

The following information details the compliance findings for the reliability standards and requirements identified in the scope of this Audit. A finding of "No Finding" indicates that the requirement is applicable to the entity, but that there was no finding of a non-compliance during the audit. A finding of "Not Applicable" indicates that the requirement is not applicable to the entity and there could not have been a finding of a potential noncompliance.

Standard	Requirement	Finding
BAL-001-0.1a effective 2015-04-01	R1	No Finding
BAL-001-0.1a effective 2015-04-01	R2	No Finding
BAL-002-1 effective 2015-04-01	R1	No Finding
BAL-002-1 effective 2015-04-01	R3	No Finding
BAL-002-1 effective 2015-04-01	R4	No Finding
BAL-002-1 effective 2015-04-01	R6	No Finding
BAL-004-0 effective 2016-01-01	R3	No Finding
BAL-005-0.2b effective 2016-01-01	R1	No Finding
BAL-005-0.2b effective 2016-01-01	R3	Not Applicable

BAL-005-0.2b effective 2016-01-01	R4	Not Applicable
BAL-005-0.2b effective 2016-01-01	R5	Not Applicable
BAL-005-0.2b effective 2016-01-01	R6	No Finding
BAL-005-0.2b effective 2016-01-01	R7	No Finding
BAL-005-0.2b effective 2016-01-01	R8	No Finding
BAL-005-0.2b effective 2016-01-01	R10	Not Applicable
BAL-005-0.2b effective 2016-01-01	R11	Not Applicable
BAL-005-0.2b effective 2016-01-01	R12	Not Applicable
BAL-005-0.2b effective 2016-01-01	R16	No Finding
BAL-005-0.2b effective 2016-01-01	R17	No Finding
COM-001-1.1 effective 2015-04-01	R1	No Finding
COM-001-1.1 effective 2015-04-01	R2	No Finding
COM-001-1.1 effective 2015-04-01	R4	No Finding
COM-002-2 effective 2016-01-01	R1	No Finding
COM-002-2 effective 2016-01-01	R2	No Finding

EOP-001-2.1b effective 2015-04-01	R1	No Finding
EOP-001-2.1b effective 2015-04-01	R2	No Finding
EOP-001-2.1b effective 2015-04-01	R3	No Finding
EOP-001-2.1b effective 2015-04-01	R4	No Finding
EOP-001-2.1b effective 2015-04-01	R5	No Finding
EOP-001-2.1b effective 2015-04-01	R6	No Finding
EOP-002-3.1 effective 2016-01-01	R1	No Finding
EOP-002-3.1 effective 2016-01-01	R2	No Finding
EOP-002-3.1 effective 2016-01-01	R3	No Finding
EOP-002-3.1 effective 2016-01-01	R4	No Finding
EOP-002-3.1 effective 2016-01-01	R5	Not applicable
EOP-002-3.1 effective 2016-01-01	R6	No Finding
EOP-002-3.1 effective 2016-01-01	R7	No Finding
EOP-002-3.1 effective 2016-01-01	R8	No Finding
EOP-002-3.1 effective 2016-01-01	R9	No Finding

EOP-005-2 effective 2016-04-01	R1	No Finding
EOP-005-2 effective 2016-04-01	R6	No Finding
EOP-005-2 effective 2016-04-01	R9	No Finding
EOP-005-2 effective 2016-04-01	R10	No Finding
EOP-005-2 effective 2016-04-01	R11	No Finding
EOP-005-2 effective 2016-04-01	R12	No Finding
EOP-005-2 effective 2016-04-01	R13	No Finding
EOP-006-2 effective 2016-04-01	R1	No Finding
EOP-006-2 effective 2016-04-01	R3	No Finding
EOP-006-2 effective 2016-04-01	R4	No Finding
EOP-006-2 effective 2016-04-01	R5	No Finding
EOP-006-2 effective 2016-04-01	R7	No Finding
EOP-006-2 effective 2016-04-01	R8	No Finding
EOP-006-2 effective 2016-04-01	R9	No Finding
EOP-006-2 effective 2016-04-01	R10	No Finding

EOP-008-1 effective 2016-04-01	R1	No Finding
EOP-008-1 effective 2016-04-01	R3	No Finding
EOP-008-1 effective 2016-04-01	R4	No Finding
EOP-008-1 effective 2016-04-01	R5	No Finding
EOP-008-1 effective 2016-04-01	R6	No Finding
EOP-008-1 effective 2016-04-01	R7	No Finding
EOP-008-1 effective 2016-04-01	R8	No Finding
FAC-011-2 effective 2016-01-01	R1	No Finding
FAC-011-2 effective 2016-01-01	R2	No Finding
FAC-011-2 effective 2016-01-01	R3	No Finding
FAC-014-2 effective 2016-01-01	R1	No Finding
FAC-014-2 effective 2016-01-01	R2	Potential Non- Compliance
FAC-014-2 effective 2016-01-01	R5	No Finding
IRO-001-1.1 effective 2016-04-01	R2	No Finding
IRO-001-1.1 effective 2016-04-01	R3	No Finding

IRO-001-1.1 effective 2016-04-01	R4	Not Applicable
IRO-001-1.1 effective 2016-04-01	R6	Not Applicable
IRO-001-1.1 effective 2016-04-01	R7	No Finding
IRO-001-1.1 effective 2016-04-01	R8	No Finding
IRO-001-1.1 effective 2016-04-01	R9	No Finding
IRO-002-2 effective 2016-01-01	R1	No Finding
IRO-002-2 effective 2016-01-01	R2	No Finding
IRO-002-2 effective 2016-01-01	R3	No Finding
IRO-002-2 effective 2016-01-01	R4	No Finding
IRO-002-2 effective 2016-01-01	R5	No Finding
IRO-002-2 effective 2016-01-01	R6	No Finding
IRO-002-2 effective 2016-01-01	R7	No Finding
IRO-002-2 effective 2016-01-01	R8	No Finding
IRO-003-2 effective 2016-01-01	R1	No Finding
IRO-003-2 effective 2016-01-01	R2	No Finding

IRO-004-2 effective 2016-01-01	R1	No Finding
IRO-005-3.1a effective 2016-04-01	R1	No Finding
IRO-005-3.1a effective 2016-04-01	R2	No Finding
IRO-005-3.1a effective 2016-04-01	R10	No Finding
IRO-005-3.1a effective 2016-04-01	R12	No Finding
IRO-006-5 effective 2016-01-01	R1	No Finding
IRO-014-1 effective 2015-04-01	R1	No Finding
IRO-014-1 effective 2015-04-01	R3	No Finding
IRO-015-1 effective 2015-04-01	R1	No Finding
IRO-015-1 effective 2015-04-01	R2	No Finding
IRO-015-1 effective 2015-04-01	R3	No Finding
IRO-016-1 effective 2015-04-01	R1	No Finding
PER-001-0.2 effective 2015-04-01	R1	No Finding
PER-003-1 effective 2016-04-01	R1	No Finding
PER-003-1 effective 2016-04-01	R2	No Finding

PER-003-1 effective 2016-04-01	R3	No Finding
PRC-001-1 effective 2016-01-01	R1	No Finding
PRC-001-1 effective 2016-01-01	R2	No Finding
PRC-001-1 effective 2016-01-01	R3	No Finding
PRC-001-1 effective 2016-01-01	R4	No Finding
PRC-001-1 effective 2016-01-01	R5	No Finding
TOP-001-1a effective 2016-01-01	R1	No Finding
TOP-001-1a effective 2016-01-01	R2	No Finding
TOP-001-1a effective 2016-01-01	R3	No Finding
TOP-001-1a effective 2016-01-01	R5	No Finding
TOP-001-1a effective 2016-01-01	R6	No Finding
TOP-001-1a effective 2016-01-01	R7	No Finding
TOP-001-1a effective 2016-01-01	R8	No Finding
TOP-003-1 effective 2016-01-01	R1	No Finding
TOP-003-1 effective 2016-01-01	R2	No Finding

TOP-003-1 effective 2016-01-01	R3	No Finding
TOP-003-1 effective 2016-01-01	R4	No Finding
TOP-004-2 effective 2015-04-01	R1	No Finding
TOP-004-2 effective 2015-04-01	R2	No Finding
TOP-004-2 effective 2015-04-01	R3	No Finding
TOP-004-2 effective 2015-04-01	R4	No Finding
TOP-004-2 effective 2015-04-01	R5	No Finding
TOP-004-2 effective 2015-04-01	R6	No Finding
TOP-005-2a effective 2016-04-01	R1	No Finding
TOP-005-2a effective 2016-04-01	R2	No Finding
TOP-007-0 effective 2015-04-01	R1	No Finding
TOP-007-0 effective 2015-04-01	R2	No Finding
TOP-007-0 effective 2015-04-01	R3	No Finding
TOP-007-0 effective 2015-04-01	R4	No Finding
TOP-008-1 effective 2015-04-01	R1	No Finding

TOP-008-1 effective 2015-04-01	R2	No Finding
TOP-008-1 effective 2015-04-01	R3	No Finding
TOP-008-1 effective 2015-04-01	R4	No Finding

Areas of Concern and Recommendations

The Audit team identified and informed CMÉ of one (1) Area of Concern, associated with TOP-004-2 R6. CMÉ should program an alarm to address any SOL exceedance on line H9A and D5A in a short term horizon.

The Audit team identified and informed CMÉ of one (1) Recommendation, associated with FAC-014-2, R5. CMÉ as the Reliability Coordinator should develop a procedure for sending information to entities that have a reliability-related need.

Compliance Culture

The NPCC Audit team performed an assessment of CMÉ compliance culture in conjunction with the Audit process. CMÉ exhibited a positive commitment to compliance with the standards. The CMÉ audit team responded to requests for further information in a very timely and professional manner. The CMÉ audit team provided documentation supporting the requirements, both in the initial submittal as well as in responding to the follow-up requests. All additional documentation requests were turned back to the audit team in a timely manner. CMÉ Self-Identified 14 Requirements from 9 Standards before the on-site audit review started began. Because 13 of the 14 issues were identified after the Notification of Audit Letter was issued, these issues were reported to the Audit Team, and handled as part of the normal audit evidence review process. The auditors determined that only one of these issues Self-Reports was a Potential Non-Compliance (PNC).

The auditors would like to acknowledge the CMÉ team for the support they offered the audit teams throughout the audit, by providing the required evidence and for responding quickly to our data requests. The SMEs were very knowledgeable and answered the interview questions precisely.