

**Preliminary assessment of the relevance and impact of the standards:****IRO-008-1 – Reliability Coordinator Operational Analyses and Real-time Assessments****IRO-009-1 – Reliability Coordinator Actions to Operate within IROLs****IRO-010-1a – Reliability Coordinator Data Specification and Collection****A. Relevance of the standards to be filed**

This assessment applies to the standards IRO-008-1, IRO-009-1 and IRO-010-1a. The purpose of these standards is to prevent instability, uncontrolled separation or cascading outages that adversely impact the reliability of the interconnection by ensuring that the bulk electric system is assessed in real-time and short-term operating environments, that prompt action to prevent or mitigate instances of exceeding Interconnection Reliability Operating Limits (IROLs) is taken, and that the reliability coordinator has the data it needs to monitor and assess the operation of its reliability coordinator area.

To achieve these objectives, the requirements of the standards shall address the following aspects :

- Performing short-term and real-time transmission reliability analyses relative to the identified operating limits;
- Operating processes, procedures or plans that identify actions to mitigate an instance of exceeding operating limits;
- Respect of the established operating limits;
- The reliability coordinator's documented specification for data and information to build and maintain models to support real-time monitoring, operational planning analyses, and real-time assessments of its reliability coordinator area;
- Communication and dissemination of specific operational actions that are needed to prevent or mitigate an instance of exceeding an IROL with those entities that are expected to take action.

**B. Applicability**

The standards IRO-008 and IRO-009 apply to the reliability coordinator.

The standard IRO-010-1a applies to the reliability coordinator, the balancing authority, the generator owners, the generator operators, the interchange authorities, the load-serving entities, the transmission operator and the transmission owners.

**C. Relevance for special provisions for Quebec (Appendix QC-IRO-008-1, Appendix QC-IRO-009-1, Appendix QC-IRO-010-1a)**

These standards apply to the main transmission system which represents the network monitored by the reliability coordinator in Quebec.

#### **D. Preliminary assessment of the impact of the adoption of the standard in Quebec**

The standards IRO-008-1 and IRO-009-1 apply to the reliability coordinator; only the System Control Direction of Hydro-Québec TransÉnergie is affected by its application in Quebec.

The impact of the standard IRO-010-1 is low to moderate given that the documented specification for data and information used to build and maintain the models is generally an established practice with the entities covered in this standard.

#### **Summary of impacts**

This summary establishes in a condensed and preliminary manner, the impacts on material, human or financial resources of the proposed standard compared to the latest revision studied or adopted by the Régie de l'énergie. The impact may vary depending on the actual applicability of the standard with certain entities whose impact is lower on the reliability on the bulk electric system in Quebec.

##### **IRO-008-1**

	<b>Low</b>	<b>Moderate</b>	<b>Important</b>
<b>Implementation of the standard</b>	●		
<b>Maintenance of the standard</b>	●		
<b>Compliance Monitoring</b>	●		

##### **IRO-009-1**

	<b>Low</b>	<b>Moderate</b>	<b>Important</b>
<b>Implementation of the standard</b>		●	
<b>Maintenance of the standard</b>	●		
<b>Compliance Monitoring</b>	●		

##### **IRO-010-1a**

	<b>Low</b>	<b>Moderate</b>	<b>Important</b>
<b>Implementation of the standard</b>		●	
<b>Maintenance of the standard</b>	●		
<b>Compliance Monitoring</b>	●		

#### **Legend:**

<b>Low:</b>	Normal industry practice or standard involving minor adjustments to processes or practices in place.
<b>Moderate:</b>	Changes that require an allocation of certain material, human or financial resources to implement, maintain and monitor compliance of the proposed standard.
<b>Important:</b>	Changes that require significant provision and allocation of material, human or financial resources to implement, maintain and monitor compliance of the proposed standard.

A more accurate assessment will be developed from forms "Evaluation of the impacts of proposed standards" to be received from the registered entities during the comment period. This assessment will be submitted with the standard to the Régie de l'énergie.

## A. Introduction

1. **Title:** Reliability Coordinator Actions to Operate Within IROLs
2. **Number:** IRO-009-1
3. **Purpose:** To prevent instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the interconnection by ensuring prompt action to prevent or mitigate instances of exceeding Interconnection Reliability Operating Limits (IROLs).
4. **Applicability:**
  - 4.1. Reliability Coordinator.
5. **Proposed Effective Date:**

In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.

In those jurisdictions where regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval.

## B. Requirements

- R1. For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) that can be implemented in time to prevent exceeding those IROLs. (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R2. For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take (up to and including load shedding) to mitigate the magnitude and duration of exceeding that IROL such that the IROL is relieved within the IROL's  $T_v$ . (*Violation Risk Factor: Medium*) (*Time Horizon: Operations Planning or Same Day Operations*)
- R3. When an assessment of actual or expected system conditions predicts that an IROL in its Reliability Coordinator Area will be exceeded, the Reliability Coordinator shall implement one or more Operating Processes, Procedures or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) to prevent exceeding that IROL. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)
- R4. When actual system conditions show that there is an instance of exceeding an IROL in its Reliability Coordinator Area, the Reliability Coordinator shall, without delay, act or direct others to act to mitigate the magnitude and duration of the instance of exceeding that IROL within the IROL's  $T_v$ . (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)

- R5.** If unanimity cannot be reached on the value for an IROL or its  $T_v$ , each Reliability Coordinator that monitors that Facility (or group of Facilities) shall, without delay, use the most conservative of the values (the value with the least impact on reliability) under consideration. (*Violation Risk Factor: High*) (*Time Horizon: Real-time Operations*)

### **C. Measures**

- M1.** Each Reliability Coordinator shall have, and make available upon request, evidence to confirm that it has Operating Processes, Procedures, or Plans to address both preventing and mitigating instances of exceeding IROLs in accordance with Requirement R1 and Requirement R2. This evidence shall include a list of any IROLs (and each associated  $T_v$ ) identified in advance, along with one or more dated Operating Processes, Procedures, or Plans that that will be used.
- M2.** Each Reliability Coordinator shall have, and make available upon request, evidence to confirm that it acted or directed others to act in accordance with Requirement R3 and Requirement R4. This evidence could include, but is not limited to, Operating Processes, Procedures, or Plans from Requirement R1, dated operating logs, dated voice recordings, dated transcripts of voice recordings, or other evidence.
- M3.** For a situation where Reliability Coordinators disagree on the value of an IROL or its  $T_v$  the Reliability Coordinator shall have, and make available upon request, evidence to confirm that it used the most conservative of the values under consideration, without delay. Such evidence could include, but is not limited to, dated computer printouts, dated operator logs, dated voice recordings, dated transcripts of voice recordings, or other equivalent evidence. (R5)

### **D. Compliance**

#### **1. Compliance Monitoring Process**

##### **1.1. Compliance Enforcement Authority**

For Reliability Coordinators that work for the Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For Reliability Coordinators that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

##### **1.2. Compliance Monitoring Period and Reset Time Frame**

Not applicable.

##### **1.3. Compliance Monitoring and Enforcement Processes**

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

## Exception Reporting

### 1.4. Data Retention

The Reliability Coordinator, shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

The Reliability Coordinator shall retain evidence of Requirement R1, Requirement R2, and Measure M1, for a rolling 12 months.

The Reliability Coordinator shall retain evidence of Requirement R3, Requirement R4, Requirement R5, Measure M2, and Measure M3 for a rolling 12 months.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records, and all IROL Violation Reports submitted since the last audit.

### 1.5. Additional Compliance Information

**Exception Reporting:** For each instance of exceeding an IROL for time greater than IROL  $T_v$ , the Reliability Coordinator shall submit an IROL Violation Report to its Compliance Enforcement Authority within 30 days of the initiation of the event.

**2. Violation Severity Levels**

Requirement	Lower	Moderate	High	Severe
<b>R1</b>				An IROL in its Reliability Coordinator Area was identified one or more days in advance and the Reliability Coordinator does not have an Operating Process, Procedure, or Plan that identifies actions to prevent exceeding that IROL. (R1)
<b>R2</b>				An IROL in its Reliability Coordinator Area was identified one or more days in advance and the Reliability Coordinator does not have an Operating Process, Procedure, or Plan that identifies actions to mitigate exceeding that IROL within the IROL's T <sub>v</sub> . (R2)
<b>R3</b>				An assessment of actual or expected system conditions predicted that an IROL in the Reliability Coordinator's Area would be exceeded, but no Operating Processes, Procedures, or Plans were implemented. (R3)
<b>R4</b>			Actual system conditions	Actual system conditions

Requirement	Lower	Moderate	High	Severe
			showed that there was an instance of exceeding an IROL in its Reliability Coordinator Area, and there was a delay of five minutes or more before acting or directing others to act to mitigate the magnitude and duration of the instance of exceeding that IROL, however the IROL was mitigated within the IROL $T_v$ . (R4)	showed that there was an instance of exceeding an IROL in its Reliability Coordinator Area, and that IROL was not resolved within the IROL's $T_v$ . (R4)
<b>R5</b>	Not applicable.	Not applicable.	Not applicable.	There was a disagreement on the value of the IROL or its $T_v$ and the most conservative limit under consideration was not used. (R5)

**E. Regional Variances**

None

**F. Associated Documents**

IROL Violation Report

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
1	October 17, 2008	Adopted by NERC Board of Trustees	
1	March 17, 2011	Order issued by FERC approving IRO-009-1 (approval effective 5/23/11)	



This appendix establishes specific provisions for the application of the standard in Québec. Provisions of the standard and of its appendix must be read together for the purposes of understanding and interpretation. Where the standard and appendix differ, the appendix shall prevail.

**A. Introduction**

- 1. Title:** Reliability Coordinator Actions to Operate Within IROLs
- 2. Number:** IRO-009-1
- 3. Purpose:** No specific provision
- 4. Applicability:** No specific provision
- 5. Effective Date:**
  - 5.1.** Adoption of the standard by the Régie de l'énergie: Month xx 201x
  - 5.2.** Adoption of the appendix by the Régie de l'énergie: Month xx 201x
  - 5.3.** Effective date of the standard and its appendix in Québec: Month xx 201x
- 6. Scope:** Main Transmission System (MTS)

**B. Requirements**

No specific provision

**C. Measures**

No specific provision

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Enforcement Authority**

The Régie de l'énergie is responsible, in Québec, for compliance enforcement with respect to the reliability standard and its appendix that it adopts.

**1.2. Compliance Monitoring Period and Reset Timeframe**

No specific provision

**1.3. Compliance Monitoring and Enforcement Processes**

No specific provision

**1.4. Data Retention**

No specific provision

**1.5. Additional Compliance Information**

No specific provision

**2. Violation Severity Levels**

No specific provision

## Standard IRO-009-1 — Reliability Coordinator Actions to Operate Within IROLs

### Appendix QC-IRO-009-1

#### Provisions specific to the standard IRO-001-1 applicable in Québec

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#### E. Regional Variances

No specific provision

#### F. Associated Documents

No specific provision

#### Version History of the Appendix

Version	Date	Action	Change Tracking
0			New