NORMES DE FIABILITÉ ADOPTÉES PAR LA RÉGIE DANS SA DÉCISION D-2015-198 (VERSION ANGLAISE)

A. Introduction

1. Title: **System Restoration Coordination**

2. Number: EOP-006-2

3. Purpose: Ensure plans are established and personnel are prepared to enable effective coordination of the System restoration process to ensure reliability is maintained during restoration and priority is placed on restoring the Interconnection.

4. Applicability:

4.1. Reliability Coordinators.

5. Proposed Effective Date: Twenty-four months after the first day of the first calendar quarter following applicable regulatory approval. In those jurisdictions where no regulatory approval is required, all requirements go into effect twenty-four months after Board of Trustees adoption.

B. Requirements

R1. Each Reliability Coordinator shall have a Reliability Coordinator Area restoration plan. The scope of the Reliability Coordinator's restoration plan starts when Blackstart Resources are utilized to re-energize a shut down area of the Bulk Electric System (BES), or separation has occurred between neighboring Reliability Coordinators, or an energized island has been formed on the BES within the Reliability Coordinator Area. The scope of the Reliability Coordinator's restoration plan ends when all of its Transmission Operators are interconnected and ~~it~~ its Reliability Coordinator Area is connected to all of its neighboring Reliability Coordinator Areas. The restoration plan shall include: *[Violation Risk Factor = High] [Time Horizon = Operations Planning]*

R1.1. A description of the high level strategy to be employed during restoration events for restoring the Interconnection including minimum criteria for meeting the objectives of the Reliability Coordinator's restoration plan.

R1.2. Operating Processes for restoring the Interconnection.

R1.3. Descriptions of the elements of coordination between individual Transmission Operator restoration plans.

R1.4. Descriptions of the elements of coordination of restoration plans with neighboring Reliability Coordinators.

R1.5. Criteria and conditions for reestablishing interconnections with other Transmission Operators within its Reliability Coordinator Area, with Transmission Operators in other Reliability Coordinator Areas, and with other Reliability Coordinators.

R1.6. Reporting requirements for the entities within the Reliability Coordinator Area during a restoration event.

R1.7. Criteria for sharing information regarding restoration with neighboring Reliability Coordinators and with Transmission Operators and Balancing Authorities within its Reliability Coordinator Area.

R1.8. Identification of the Reliability Coordinator as the primary contact for disseminating information regarding restoration to neighboring Reliability Coordinators, and to Transmission Operators, and Balancing Authorities within its Reliability Coordinator Area.

R1.9. Criteria for transferring operations and authority back to the Balancing Authority.

R2. The Reliability Coordinator shall distribute its most recent Reliability Coordinator Area restoration plan to each of its Transmission Operators and neighboring Reliability Coordinators within 30 calendar days of creation or revision. *[Violation Risk Factor = Lower] [Time Horizon = Operations Planning]*

R3. Each Reliability Coordinator shall review its restoration plan within 13 calendar months of the last review. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*

R4. Each Reliability Coordinator shall review their neighboring Reliability Coordinator's restoration plans. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*

R4.1. If the Reliability Coordinator finds conflicts between its restoration plans and any of its neighbors, the conflicts shall be resolved in 30 calendar days.

R5. Each Reliability Coordinator shall review the restoration plans required by EOP-005 of the Transmission Operators within its Reliability Coordinator Area. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*

R5.1. The Reliability Coordinator shall determine whether the Transmission Operator's restoration plan is coordinated and compatible with the Reliability Coordinator's restoration plan and other Transmission Operators' restoration plans within its Reliability Coordinator Area. The Reliability Coordinator shall approve or disapprove, with stated reasons, the Transmission Operator's submitted restoration plan within 30 calendar days following the receipt of the restoration plan from the Transmission Operator.

R6. Each Reliability Coordinator shall have a copy of its latest restoration plan and copies of the latest approved restoration plan of each Transmission Operator in its Reliability Coordinator Area within its primary and backup control rooms so that it is available to all of its System Operators prior to the implementation date. *[Violation Risk Factor = Lower] [Time Horizon = Operations Planning]*

R7. Each Reliability Coordinator shall work with its affected Generator Operators~~,~~ and Transmission Operators as well as neighboring Reliability Coordinators to monitor restoration progress, coordinate restoration, and take actions to restore the BES frequency within acceptable operating limits. If the restoration plan cannot be completed as expected the Reliability Coordinator shall utilize its restoration plan strategies to facilitate System restoration. *[Violation Risk Factor = High] [Time Horizon = Real-time Operations]*

R8. The Reliability Coordinator shall coordinate or authorize resynchronizing islanded areas that bridge boundaries between Transmission Operators or Reliability

Coordinators. If the resynchronization cannot be completed as expected the Reliability Coordinator shall utilize its restoration plan strategies to facilitate resynchronization. *[Violation Risk Factor = High] [Time Horizon = Real-time Operations]*

R9. Each Reliability Coordinator shall include within its operations training program, annual System restoration training for its System Operators to assure the proper execution of its restoration plan. This training program shall address the following: *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*

R9.1. The coordination role of the Reliability Coordinator.

R9.2. Reestablishing the Interconnection.

R10. Each Reliability Coordinator shall conduct two System restoration drills, exercises, or simulations per calendar year, which shall include the Transmission Operators and Generator Operators as dictated by the particular scope of the drill, exercise, or simulation that is being conducted. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*

R10.1. Each Reliability Coordinator shall request each Transmission Operator identified in its restoration plan and each Generator Operator identified in the Transmission Operators' restoration plans to participate in a drill, exercise, or simulation at least every two calendar years.

C. Measures

M1. Each Reliability Coordinator shall have available a dated copy of its restoration plan in accordance with Requirement R1.

M2. Each Reliability Coordinator shall provide evidence such as e-mails with receipts, posting to a secure web site with notification to affected entities, or registered mail receipts, that its most recent restoration plan has been distributed in accordance with Requirement R2.

M3. Each Reliability Coordinator shall provide evidence such as a review signature sheet, or revision histories, that it has reviewed its restoration plan within 13 calendar months of the last review in accordance with Requirement R3.

M4. Each Reliability Coordinator shall provide evidence such as dated review signature sheets that it has reviewed its neighboring Reliability Coordinator's restoration plans and resolved any conflicts within 30 calendar days in accordance with Requirement R4.

M5. Each Reliability Coordinator shall provide evidence, such as a review signature sheet or emails, that it has reviewed, approved or disapproved, and notified its Transmission Operator's within 30 calendar days following the receipt of the restoration plan from the Transmission Operator in accordance with Requirement R5.

M6. Each Reliability Coordinator shall have documentation such as e-mail receipts that it has made the latest copy of its restoration plan and copies of the latest approved restoration plan of each Transmission Operator in its Reliability Coordinator Area available in its primary and backup control rooms and to each of its System Operators prior to the implementation date in accordance with Requirement R6.

M7. Each Reliability Coordinator involved shall have evidence such as voice recordings, e-mail, dated computer printouts, or operator logs, that it monitored and coordinated restoration progress in accordance with Requirement R7.

M8. If there has been a resynchronizing of an islanded area, each Reliability Coordinator involved shall have evidence such as voice recordings, e-mail, or operator logs, that it coordinated or authorized resynchronizing in accordance with Requirement R8.

M9. Each Reliability Coordinator shall have an electronic or hard copy of its training records available showing that it has provided training in accordance with Requirement R9.

M10. Each Reliability Coordinator shall have evidence that it conducted two System restoration drills, exercises, or simulations per calendar year and that Transmission Operators and Generator Operators included in the Reliability Coordinator's restoration plan were invited in accordance with Requirement R10.

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity.

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

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 current restoration plan and any restoration plans in force since the last compliance audit for Requirement R1, Measure M1.
- Distribution of its most recent restoration plan and any restoration plans in force for the current calendar year and three prior calendar years for Requirement R2, Measure M2.
- It's reviewed restoration plan for the current review period and the last three prior review periods for Requirement R3, Measure M3.

- Reviewed copies of neighboring Reliability Coordinator restoration plans for the current calendar year and the three prior calendar years for Requirement R4, Measure M4.
- The reviewed restoration plans for the current calendar year and the last three prior calendar years for Requirement R5, Measure M5.
- The current, approved restoration plan and any restoration plans in force for the last three calendar years was made available in its control rooms for Requirement R6, Measure M6.
- If there has been a restoration event, implementation of its restoration plan on any occasion over a rolling 12 month period for Requirement R7, Measure M7.
- If there has been a resynchronization of an islanded area, implementation of its restoration plan on any occasion over a rolling 12 month period for Requirement R8, Measure M8.
- Actual training program materials or descriptions for three calendar years for Requirements R9, Measure M9.
- Records of all Reliability Coordinator restoration drills, exercises, or simulations since its last compliance audit as well as one previous compliance audit period for Requirement R10, Measure M10.

If a Reliability Coordinator is found non-compliant, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.5. Additional Compliance Information

None.

2. Violation Severity Levels

R#	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Reliability Coordinator failed to include one sub-requirement of Requirement R1 within its restoration plan.	The Reliability Coordinator failed to include two sub-requirements of Requirement R1 within its restoration plan.	The Reliability Coordinator failed to include three of the sub-requirements of Requirement R1 within its restoration plan.	The Reliability Coordinator failed to include four or more of the sub-requirements within its restoration plan.
R2.	The Reliability Coordinator distributed the most recent Reliability Coordinator Area restoration plan to the entities identified in Requirement R2 but was more than 30 calendar days late but less than 60 calendar days late.	The Reliability Coordinator distributed the most recent Reliability Coordinator Area restoration plan to the entities identified in Requirement R2 but was 60 calendar days or more late, but less than 90 calendar days late.	The Reliability Coordinator distributed the most recent Reliability Coordinator Area restoration plan to the entities identified in Requirement R2 but was 90 or more calendar days late but less than 120 calendar days late.	The Reliability Coordinator distributed the most recent Reliability Coordinator Area restoration plan to entities identified in Requirement R2 but was 120 calendar days or more late.
R3.	N/A	N/A	N/A	The Reliability Coordinator did not review its restoration plan within 13 calendar months of the last review.
R4.	The Reliability Coordinator did not review and resolve conflicts with the submitted restoration plans from its neighboring Reliability Coordinators within 30 calendar days but did resolve conflicts within 60 calendar days.	The Reliability Coordinator did not review and resolve conflicts with the submitted restoration plans from its neighboring Reliability Coordinators within 30 calendar days but did resolve conflicts within 90 calendar days.	–The Reliability Coordinator did not review and resolve conflicts with the submitted restoration plans from its neighboring Reliability Coordinators within 30 calendar days but did resolve conflicts within 120 calendar days.	The Reliability Coordinator did not review and resolve conflicts with the submitted restoration plans from its neighboring Reliability Coordinators within 120 calendar days.

3.

R5.	The Reliability Coordinator did not review and approve/disapprove the submitted restoration plans from its Transmission Operators and neighboring Reliability Coordinators within 30 calendar days of receipt but did review and approve/disapprove the plans within 45 calendar days of receipt. OR The Reliability Coordinator failed to notify the Transmission Operator of its approval or disapproval with stated reasons for disapproval within 30 calendar days of receipt but did notify the Transmission Operator of its approval or disapproval with reasons within 45 calendar days of receipt.	The Reliability Coordinator did not review and approve/disapprove the submitted restoration plans from its Transmission Operators and neighboring Reliability Coordinators within 30 calendar days of receipt but did review and approve/disapprove the plans within 60 calendar days of receipt. OR The Reliability Coordinator failed to notify the Transmission Operator of its approval or disapproval with stated reasons for disapproval within 30 calendar days of receipt, but did notify the Transmission Operator of its approval or disapproval with reasons within 60 calendar days of receipt	The Reliability Coordinator did not review and approve/disapprove the submitted restoration plans from its Transmission Operators and neighboring Reliability Coordinators within 30 calendar days of receipt but did review and approve/disapprove the plans within 90 calendar days of receipt. OR The Reliability Coordinator failed to notify the Transmission Operator of its approval or disapproval with stated reasons for disapproval within 30 calendar days of receipt but did notify the Transmission Operator of its approval or disapproval with reasons within 90 calendar days of receipt.	The Reliability Coordinator did not review and approve/disapprove the submitted restoration plans from its Transmission Operators and neighboring Reliability Coordinators for more than 90 calendar days of receipt. OR The Reliability Coordinator failed to notify the Transmission Operator of its approval or disapproval with stated reasons for disapproval for more than 90 calendar days of receipt. .
R6.	N/A	N/A	The Reliability Coordinator did not have a copy of the latest approved restoration plan of all Transmission Operators in its Reliability Coordinator Area within its primary and backup control rooms prior to the	The Reliability Coordinator did not have a copy of its latest restoration plan within its primary and backup control rooms prior to the implementation date.

			implementation date.	
R7.	N/A	N/A	N/A	The Reliability Coordinator did not work with its affected Generator Operators and Transmission Operators as well as neighboring Reliability Coordinators to monitor restoration progress, coordinate restoration, and take actions to restore the BES frequency within acceptable operating limits. OR When the restoration plan cannot be completed as expected, the Reliability Coordinator did not utilize its restoration plan strategies to facilitate System restoration.
R8.	N/A	N/A	N/A	The Reliability Coordinator did not coordinate or authorize resynchronizing islanded areas that bridge boundaries between Transmission Operators or Reliability Coordinators. OR If the resynchronization could not be completed as expected, the Reliability Coordinator did

				not utilize its restoration plan strategies to facilitate resynchronization.
R9.	N/A	N/A	The Reliability Coordinator included the annual System restoration training within its operations training program, but did not address both of the sub-requirements.	The Reliability Coordinator did not include the annual System restoration training within its operations training program.
R10.	The Reliability Coordinator only held one restoration drill, exercise, or simulation during the calendar year.	The Reliability Coordinator did not invite a Transmission Operator or Generator Operator identified in its restoration plan to participate in a drill, exercise, or simulation within two calendar years.	N/A	The Reliability Coordinator did not hold a restoration drill, exercise, or simulation during the calendar year.

E. Regional Variances

None.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised
2	TBD	Revisions pursuant to Project 2006-03	Updated Measures and Compliance to match new Requirements
2	August 5, 2009	Adopted by Board of Trustees	Revised
2	March 17, 2011	Order issued by FERC approving EOP-006-2 (approval effective 5/23/11)	
2	July 1, 2013	Updated VRFs and VSLs based on June 24, 2013 approval.	

Appendix QC-EOP-006-2
Provisions specific to the standard EOP-006-2 applicable in Québec

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: System Restoration Coordination

2. Number: EOP-006-2

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: December 9, 2015

5.2. Adoption of the appendix by the Régie de l'énergie: December 9, 2015

5.3. Effective date of the standard and its appendix in Québec: April 1, 2016

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 Time Frame

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

Appendix QC-EOP-006-2
Provisions specific to the standard EOP-006-2 applicable in Québec

E. Regional Variances

No specific provision

Revision History

Revision	Adoption Date	Action	Change Tracking
0	April 1, 2016	New Appendix	New

A. Introduction

1. **Title:** **Loss of Control Center Functionality**

2. **Number:** **EOP-008-1**

3. **Purpose:** Ensure continued reliable operations of the Bulk Electric System (BES) in the event that a control center becomes inoperable.

4. **Applicability:**

   4.1. Functional Entity

   4.1.1. Reliability Coordinator.

   4.1.2. Transmission Operator.

   4.1.3. Balancing Authority.

5. **Effective Date:** The first day of the first calendar quarter twenty-four months after applicable regulatory approval. In those jurisdictions where no regulatory approval is required, the standard shall become effective on the first day of the first calendar quarter twenty-four months after Board of Trustees adoption.

B. Requirements

R1. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have a current Operating Plan describing the manner in which it continues to meet its functional obligations with regard to the reliable operations of the BES in the event that its primary control center functionality is lost. This Operating Plan for backup functionality shall include the following, at a minimum: *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*

1.1. The location and method of implementation for providing backup functionality for the time it takes to restore the primary control center functionality.

1.2. A summary description of the elements required to support the backup functionality. These elements shall include, at a minimum:

1.2.1. Tools and applications to ensure that System Operators have situational awareness of the BES.

1.2.2. Data communications.

1.2.3. Voice communications.

1.2.4. Power source(s).

1.2.5. Physical and cyber security.

1.3. An Operating Process for keeping the backup functionality consistent with the primary control center.

1.4. Operating Procedures, including decision authority, for use in determining when to implement the Operating Plan for backup functionality.

1.5. A transition period between the loss of primary control center functionality and the time to fully implement the backup functionality that is less than or equal to two hours.

1.6. An Operating Process describing the actions to be taken during the transition period between the loss of primary control center functionality and the time to fully implement backup functionality elements identified in Requirement R1, Part 1.2. The Operating Process shall include at a minimum:

1.6.1. A list of all entities to notify when there is a change in operating locations.

1.6.2. Actions to manage the risk to the BES during the transition from primary to backup functionality as well as during outages of the primary or backup functionality.

1.6.3. Identification of the roles for personnel involved during the initiation and implementation of the Operating Plan for backup functionality.

R2. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have a copy of its current Operating Plan for backup functionality available at its primary control center and at the location providing backup functionality. *[Violation Risk Factor = Lower] [Time Horizon = Operations Planning]*

R3. Each Reliability Coordinator shall have a backup control center facility (provided through its own dedicated backup facility or at another entity's control center staffed with certified Reliability Coordinator operators when control has been transferred to the backup facility) that provides the functionality required for maintaining compliance with all Reliability Standards that depend on primary control center functionality. To avoid requiring a tertiary facility, a backup facility is not required during: *[Violation Risk Factor = High] [Time Horizon = Operations Planning]*

- Planned outages of the primary or backup facilities of two weeks or less
- Unplanned outages of the primary or backup facilities

R4. Each Balancing Authority and Transmission Operator shall have backup functionality (provided either through a facility or contracted services staffed by applicable certified operators when control has been transferred to the backup functionality location) that includes monitoring, control, logging, and alarming sufficient for maintaining compliance with all Reliability Standards that depend on a Balancing Authority and Transmission Operator's primary control center functionality respectively. To avoid requiring tertiary functionality, backup functionality is not required during: *[Violation Risk Factor = High] [Time Horizon = Operations Planning]*

- Planned outages of the primary or backup functionality of two weeks or less
- Unplanned outages of the primary or backup functionality

R5. Each Reliability Coordinator, Balancing Authority, and Transmission Operator, shall annually review and approve its Operating Plan for backup functionality. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*

5.1. An update and approval of the Operating Plan for backup functionality shall take place within sixty calendar days of any changes to any part of the Operating Plan described in Requirement R1.

R6. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have primary and backup functionality that do not depend on each other for the control center functionality required to maintain compliance with Reliability Standards. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*

R7. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall conduct and document results of an annual test of its Operating Plan that demonstrates: *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*

7.1. The transition time between the simulated loss of primary control center functionality and the time to fully implement the backup functionality.

7.2. The backup functionality for a minimum of two continuous hours.

R8. Each Reliability Coordinator, Balancing Authority, and Transmission Operator that has experienced a loss of its primary or backup functionality and that anticipates that the loss of primary or backup functionality will last for more than six calendar months shall provide a plan to its Regional Entity within six calendar months of the date when the functionality is lost, showing how it will re-establish primary or backup functionality. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*

C. Measures

M1. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have a dated, current, in force Operating Plan for backup functionality in accordance with Requirement R1, in electronic or hardcopy format.

M2. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have a dated, current, in force copy of its Operating Plan for backup functionality in accordance with Requirement R2, in electronic or hardcopy format, available at its primary control center and at the location providing backup functionality.

M3. Each Reliability Coordinator shall provide dated evidence that it has a backup control center facility (provided through its own dedicated backup facility or at another entity's control center staffed with certified Reliability Coordinator operators when control has been transferred to the backup facility) that provides the functionality required for maintaining compliance with all Reliability Standards that depend on primary control center functionality in accordance with Requirement R3.

M4. Each Balancing Authority and Transmission Operator shall provide dated evidence that its backup functionality (provided either through a facility or contracted services staffed by applicable certified operators when control has been transferred to the backup functionality location) includes monitoring, control, logging, and alarming sufficient for maintaining compliance with all Reliability Standards that depend on a Balancing Authority or Transmission Operator's primary control center functionality respectively in accordance with Requirement R4.

M5. Each Reliability Coordinator, Balancing Authority, and Transmission Operator, shall have evidence that its dated, current, in force Operating Plan for backup functionality, in electronic or hardcopy format, has been reviewed and approved annually and that it has been updated within sixty calendar days of any changes to any part of the Operating Plan described in Requirement R1 in accordance with Requirement R5.

M6. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have dated evidence that its primary and backup functionality do not depend on each other for the control center functionality required to maintain compliance with Reliability Standards in accordance with Requirement R6.

M7. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall provide evidence such as dated records, that it has completed and documented its annual test of its Operating Plan for backup functionality, in accordance with Requirement R7.

M8. Each Reliability Coordinator, Balancing Authority, and Transmission Operator that has experienced a loss of their primary or backup functionality and that anticipates that the loss of primary or backup functionality will last for more than six calendar months shall provide evidence that a plan has been submitted to its Regional Entity within six calendar months of the date when the functionality is lost showing how it will re-establish primary or backup functionality in accordance with Requirement R8.

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity.

1.2. Compliance Monitoring and Enforcement Processes:

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

1.3. Data Retention

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

- Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall retain its dated, current, in force Operating Plan for backup functionality plus all issuances of the Operating Plan for backup functionality since its last compliance audit in accordance with Measurement M1.
- Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall retain a dated, current, in force copy of its Operating Plan for backup functionality, with evidence of its last issue, available at its primary control center and at the location providing backup functionality, for the current year, in accordance with Measurement M2.
- Each Reliability Coordinator shall retain dated evidence for the time period since its last compliance audit, that it has demonstrated that it has a backup control center facility (provided through its own dedicated backup facility or at another entity's control center staffed with certified Reliability Coordinator operators when control has been transferred to the backup facility) in accordance with Requirement R3 that provides the functionality required for maintaining compliance with all Reliability Standards that depend on primary control center functionality in accordance with Measurement M3.
- Each Balancing Authority and Transmission Operator shall retain dated evidence for the time period since its last compliance audit, that it has demonstrated that it's backup functionality (provided either through a facility or contracted services staffed by applicable certified operators when control has been transferred to the backup functionality location) in accordance with Requirement R4 includes monitoring, control, logging, and alarming sufficient for maintaining compliance with all Reliability Standards that depend on a Balancing Authority and Transmission Operator's primary control center functionality respectively in accordance with Measurement M4.
- Each Reliability Coordinator, Balancing Authority, and Transmission Operator, shall retain evidence for the time period since its last compliance audit, that its dated,

current, in force Operating Plan for backup functionality, has been reviewed and approved annually and that it has been updated within sixty calendar days of any changes to any part of the Operating Plan described in Requirement R1 in accordance with Measurement M5.

- Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall retain dated evidence for the current year and for any Operating Plan for backup functionality in force since its last compliance audit, that its primary and backup functionality do not depend on each other for the control center functionality required to maintain compliance with Reliability Standards in accordance with Measurement M6.
- Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall retain evidence for the current year and one previous year, such as dated records, that it has tested its Operating Plan for backup functionality, in accordance with Measurement M7.
- Each Reliability Coordinator, Balancing Authority, and Transmission Operator that has experienced a loss of their primary or backup functionality and that anticipates that the loss of primary or backup functionality would last for more than six calendar months shall retain evidence for the current in force document and any such documents in force since its last compliance audit that a plan has been submitted to its Regional Entity within six calendar months of the date when the functionality is lost showing how it will re-establish primary or backup functionality in accordance with Measurement M8.

1.4. Additional Compliance Information

None.

2. Violation Severity Levels

R#	Lower	Moderate	High	Severe
R1.	The responsible entity had a current Operating Plan for backup functionality but the plan was missing one of the requirement's six Parts (1.1 through 1.6).	The responsible entity had a current Operating Plan for backup functionality but the plan was missing two of the requirement's six Parts (1.1 through 1.6).	The responsible entity had a current Operating Plan for backup functionality but the plan was missing three of the requirement's six Parts (1.1 through 1.6).	The responsible entity had a current Operating Plan for backup functionality, but the plan was missing four or more of the requirement's six Parts (1.1 through 1.6) OR The responsible entity did not have a current Operating Plan for backup functionality.
R2	N/A	The responsible entity did not have a copy of its current Operating Plan for backup functionality available in at least one of its control locations.	N/A	The responsible entity did not have a copy of its current Operating Plan for backup functionality at any of its locations.
R3.	N/A	N/A	N/A	The Reliability Coordinator does not have a backup control center facility (provided through its own dedicated backup facility or at another entity's control center staffed with certified Reliability Coordinator operators when control has been transferred to the backup facility) that provides the functionality required for maintaining compliance with all Reliability Standards that depend on primary control center functionality.
R4.	N/A	N/A	N/A	The responsible entity does not have backup functionality (provided either through a facility or contracted services staffed by applicable certified operators when control has been transferred to the backup functionality location) that includes monitoring, control, logging, and alarming

R#	Lower	Moderate	High	Severe
				sufficient for maintaining compliance with all Reliability Standards that depend on a Balancing Authority and Transmission Operator's primary control center functionality respectively.
R5.	The responsible entity did not update and approve its Operating Plan for backup functionality for more than 60 calendar days and less than or equal to 70 calendar days after a change to any part of the Operating Plan described in Requirement R1.	The responsible entity did not update and approve its Operating Plan for backup functionality for more than 70 calendar days and less than or equal to 80 calendar days after a change to any part of the Operating Plan described in Requirement R1.	The responsible entity did not update and approve its Operating Plan for backup functionality for more than 80 calendar days and less than or equal to 90 calendar days after a change to any part of the Operating Plan described in Requirement R1.	The responsible entity did not have evidence that its Operating Plan for backup functionality was annually reviewed and approved. OR, The responsible entity did not update and approve its Operating Plan for backup functionality for more than 90 calendar days after a change to any part of the Operating Plan described in Requirement R1.
R6.	N/A	N/A	N/A	The responsible entity has primary and backup functionality that do depend on each other for the control center functionality required to maintain compliance with Reliability Standards.
R7.	The responsible entity conducted an annual test of its Operating Plan for backup functionality but it did not document the results. OR, The responsible entity conducted an annual test of its Operating Plan for backup functionality but the test was for less than two continuous hours but more than or equal to 1.5 continuous hours.	The responsible entity conducted an annual test of its Operating Plan for backup functionality but the test was for less than 1.5 continuous hours but more than or equal to 1 continuous hour.	The responsible entity conducted an annual test of its Operating Plan for backup functionality but the test did not assess the transition time between the simulated loss of its primary control center and the time to fully implement the backup functionality OR, The responsible entity conducted an annual test of its Operating Plan for backup functionality but the test was for less than 1 continuous hour but	The responsible entity did not conduct an annual test of its Operating Plan for backup functionality. OR, The responsible entity conducted an annual test of its Operating Plan for backup functionality but the test was for less than 0.5 continuous hours.

R#	Lower	Moderate	High	Severe
			more than or equal to 0.5 continuous hours.	
R8.	The responsible entity experienced a loss of its primary or backup functionality and anticipated that the loss of primary or backup functionality would last for more than six calendar months and provided a plan to its Regional Entity showing how it will re-establish primary or backup functionality but the plan was submitted more than six calendar months but less than or equal to seven calendar months after the date when the functionality was lost.	The responsible entity experienced a loss of its primary or backup functionality and anticipated that the loss of primary or backup functionality would last for more than six calendar months provided a plan to its Regional Entity showing how it will re-establish primary or backup functionality but the plan was submitted in more than seven calendar months but less than or equal to eight calendar months after the date when the functionality was lost.	The responsible entity experienced a loss of its primary or backup functionality and anticipated that the loss of primary or backup functionality would last for more than six calendar months provided a plan to its Regional Entity showing how it will re-establish primary or backup functionality but the plan was submitted in more than eight calendar months but less than or equal to nine calendar months after the date when the functionality was lost.	The responsible entity experienced a loss of its primary or backup functionality and anticipated that the loss of primary or backup functionality would last for more than six calendar months, but did not submit a plan to its Regional Entity showing how it will re-establish primary or backup functionality for more than nine calendar months after the date when the functionality was lost.

E. Regional Variances

None.

Version History

Version	Date	Action	Change Tracking
1	TBD	Revisions for Project 2006-04	Major re-write to accommodate changes noted in project file
1	August 5, 2010	Adopted by the Board of Trustees	
1	April 21, 2011	FERC Order issued approving EOP-008-1 (approval effective June 27, 2011)	
1	July 1, 2013	Updated VRFs and VSLs based on June 24, 2013 approval.	

Appendix QC-EOP-008-1
Provisions specific to the standard EOP-008-1 applicable in Québec

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: **Loss of Control Center Functionality**

2. Number: EOP-008-1

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: December 9, 2015

5.2. Adoption of the appendix by the Régie de l'énergie: December 9, 2015

5.3. Effective date of the standard and its appendix in Québec: April 1, 2016

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 and Enforcement Processes

No specific provision

1.3. Data Retention

No specific provision

1.4. Additional Compliance Information

No specific provision

2. Violation Severity Levels

No specific provision

E. Regional Variances

No specific provision

Appendix QC-EOP-008-1
Provisions specific to the standard EOP-008-1 applicable in Québec

Revision History

Revision	Adoption Date	Action	Change Tracking
0	December 9, 2015	New appendix	New

A. Introduction

1. Title: Operating Personnel Credentials

2. Number: PER-003-1

3. Purpose: To ensure that System Operators performing the reliability-related tasks of the Reliability Coordinator, Balancing Authority and Transmission Operator are certified through the NERC System Operator Certification Program when filling a Real-time operating position responsible for control of the Bulk Electric System.

4. Applicability:

4.1. Reliability Coordinator

4.2. Transmission Operator

4.3. Balancing Authority

5. Effective Date:

5.1. In those jurisdictions where regulatory approval is required, this standard shall become effective the first calendar day of the first calendar quarter twelve months after applicable regulatory approval. In those jurisdictions where no regulatory approval is required, this standard shall become effective the first calendar day of the first calendar quarter twelve months after Board of Trustees adoption.

B. Requirements

R1. Each Reliability Coordinator shall staff its Real-time operating positions performing Reliability Coordinator reliability-related tasks with System Operators who have demonstrated minimum competency in the areas listed by obtaining and maintaining a valid NERC Reliability Operator certificate [(1)]: *[Risk Factor: High][Time Horizon: Real-time Operations]*

1.1. Areas of Competency

1.1.1. Resource and demand balancing

1.1.2. Transmission operations

1.1.3. Emergency preparedness and operations

1.1.4. System operations

1.1.5. Protection and control

1.1.6. Voltage and reactive

1.1.7. Interchange scheduling and coordination

1.1.8. Interconnection reliability operations and coordination

[1] Non-NERC certified personnel performing any reliability-related task of a real-time operating position must be under the direct supervision of a NERC Certified System Operator stationed at that operating position; the NERC Certified System Operator at that operating position has ultimate responsibility for the performance of the reliability-related tasks.

R2. Each Transmission Operator shall staff its Real-time operating positions performing Transmission Operator reliability-related tasks with System Operators who have demonstrated minimum competency in the areas listed by obtaining and maintaining one of the following valid NERC certificates [1]: *[Risk Factor: High][Time Horizon: Real-time Operations]*:

2.1. Areas of Competency

2.1.1. Transmission operations

2.1.2. Emergency preparedness and operations

2.1.3. System operations

2.1.4. Protection and control

2.1.5. Voltage and reactive

2.2. Certificates

- Reliability Operator
- Balancing, Interchange and Transmission Operator
- Transmission Operator

R3. Each Balancing Authority shall staff its Real-time operating positions performing Balancing Authority reliability-related tasks with System Operators who have demonstrated minimum competency in the areas listed by obtaining and maintaining one of the following valid NERC certificates [1]: *[Risk Factor: High][Time Horizon: Real-time Operations]*:

3.1. Areas of Competency

3.1.1. Resources and demand balancing

3.1.2. Emergency preparedness and operations

3.1.3. System operations

3.1.4. Interchange scheduling and coordination

3.2. Certificates

- Reliability Operator
- Balancing, Interchange and Transmission Operator
- Balancing and Interchange Operator

C. Measures

M1. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have the following evidence to show that it staffed its Real-time operating positions

[1] Non-NERC certified personnel performing any reliability-related task of an operating position must be under the direct supervision of a NERC Certified System Operator stationed at that operating position; the NERC Certified System Operator at that operating position has ultimate responsibility for the performance of the reliability-related tasks.

performing reliability-related tasks with System Operators who have demonstrated the applicable minimum competency by obtaining and maintaining the appropriate, valid NERC certificate (R1, R2, R3):

M1.1 A list of Real-time operating positions.

M1.2 A list of System Operators assigned to its Real-time operating positions.

M1.3 A copy of each of its System Operator's NERC certificate or NERC certificate number with expiration date which demonstrates compliance with the applicable Areas of Competency.

M1.4 Work schedules, work logs, or other equivalent evidence showing which System Operators were assigned to work in Real-time operating positions.

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Monitoring Authority

For Reliability Coordinators and other functional entities that work for their Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

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

1.2. Compliance Monitoring and Enforcement Processes:

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

1.3. Data Retention

Each Reliability Coordinator, Transmission Operator and Balancing Authority shall keep data or evidence to show compliance for three years or since its last compliance audit, whichever time frame is the greatest, unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

If a Reliability Coordinator, Transmission Operator or Balancing Authority is found non-compliant, it shall keep information related to the non-compliance until found compliant or the time period specified above, whichever is longer.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent records.

1.4. Additional Compliance Information

None.

2.0 Violation Severity Levels

R#	Lower VSL	Medium VSL	High VSL	Severe VSL
R1				The Reliability Coordinator failed to staff each Real-time operating position performing Reliability Coordinator reliability-related tasks with a System Operator having a valid NERC certificate as defined in Requirement R1.
R2				The Transmission Operator failed to staff each Real-time operating position performing Transmission Operator reliability-related tasks with a System Operator having a valid NERC certificate as defined in Requirement R2, Part 2.2.
R3				The Balancing Authority failed to staff each Real-time operating position performing Balancing Authority reliability-related tasks with a System Operator having a valid NERC certificate as defined in Requirement R3, Part 3.2.

E. Regional Variances

None.

F. Associated Documents

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
1	February 17, 2011	Complete revision under Project 2007-04	Revision
1	February 17, 2011	Adopted by Board of Trustees	
1	September 15, 2011	FERC Order issued by FERC approving PER-003-1 (effective date of the Order is September 15, 2011)	

Appendix QC-PER-003-1
Provisions specific to the standard PER-003-1 applicable in Québec

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: **Operating Personnel Credentials**

2. Number: PER-003-1

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: December 9, 2015

5.2. Adoption of the appendix by the Régie de l'énergie: December 9, 2015

5.3. Effective date of the standard and its appendix in Québec: April 1, 2016

B. Requirements

No specific provision

C. Measures

No specific provision

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Monitoring Authority

No specific provision

1.2. Compliance Monitoring and Enforcement Processes

No specific provision

1.3. Data Retention

No specific provision

1.4. Additional Compliance Information

No specific provision

2. Violation Severity Levels

No specific provision

E. Regional Variances

No specific provision

F. Associated Documents

No specific provision

Appendix QC-PER-003-1
Provisions specific to the standard PER-003-1 applicable in Québec

Revision History

Revision	Adoption Date	Action	Change Tracking
0	December 9, 2015	New Appendix	New