

Normes de fiabilité (version anglaise)

A. Introduction

1. **Title:** System Restoration from Blackstart Resources
2. **Number:** EOP-005-3
3. **Purpose:** Ensure plans, Facilities, and personnel are prepared to enable System restoration from Blackstart Resources to ensure reliability is maintained during restoration and priority is placed on restoring the Interconnection.
4. **Applicability:**
 - 4.1. **Functional Entities:**
 - 4.1.1. Transmission Operators
 - 4.1.2. Generator Operators
 - 4.1.3. Transmission Owners identified in the Transmission Operators restoration plan
 - 4.1.4. Distribution Providers identified in the Transmission Operators restoration plan
5. **Effective Date:** See the Implementation Plan for EOP-005-3.
6. **Standard-Only Definition:** None

B. Requirements and Measures

- R1. Each Transmission Operator shall develop and implement a restoration plan approved by its Reliability Coordinator. The restoration plan shall be implemented to restore the Transmission Operator's System following a Disturbance in which one or more areas of the Bulk Electric System (BES) shuts down and the use of Blackstart Resources is required to restore the shutdown area to a state whereby the choice of the next Load to be restored is not driven by the need to control frequency or voltage regardless of whether the Blackstart Resource is located within the Transmission Operator's System. The restoration plan shall include: *[Violation Risk Factor = High]* *[Time Horizon = Operations Planning, Real-time Operations]*
 - 1.1. Strategies for System restoration that are coordinated with its Reliability Coordinator's high level strategy for restoring the Interconnection.
 - 1.2. A description of how all Agreements or mutually-agreed upon procedures or protocols for off-site power requirements of nuclear power plants, including priority of restoration, will be fulfilled during System restoration.
 - 1.3. Procedures for restoring interconnections with other Transmission Operators under the direction of its Reliability Coordinator.
 - 1.4. Identification of each Blackstart Resource and its characteristics including but not limited to the following: the name of the Blackstart Resource, location, megawatt and megavar capacity, and type of unit.

- 1.5. Identification of Cranking Paths and initial switching requirements between each Blackstart Resource and the unit(s) to be started.
 - 1.6. Identification of acceptable operating voltage and frequency limits during restoration.
 - 1.7. Operating Processes to reestablish connections within the Transmission Operator's System for areas that have been restored and are prepared for reconnection.
 - 1.8. Operating Processes to restore Loads required to restore the System, such as station service for substations, units to be restarted or stabilized, the Load needed to stabilize generation and frequency, and provide voltage control.
 - 1.9. Operating Processes for transferring operations back to the Balancing Authority in accordance with its Reliability Coordinator's criteria.
- M1.** Each Transmission Operator shall have a dated, documented System restoration plan developed in accordance with Requirement R1 that has been approved by its Reliability Coordinator as shown with the documented approval from its Reliability Coordinator and will have evidence, such as operator logs, voice recordings or other operating documentation, voice recordings or other communication documentation to show that its restoration plan was implemented for times when a Disturbance has occurred, in accordance with Requirement R1.
- R2.** Each Transmission Operator shall provide the entities identified in its approved restoration plan with a description of any changes to their roles and specific tasks prior to the effective date of the plan. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- M2.** Each Transmission Operator shall have evidence such as dated electronic receipts or registered mail receipts that it provided the entities identified in its approved restoration plan with a description of any changes to their roles and specific tasks prior to the effective date of the plan in accordance with Requirement R2.
- R3.** Each Transmission Operator shall review its restoration plan and submit it to its Reliability Coordinator annually on a mutually-agreed, predetermined schedule. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- M3.** Each Transmission Operator shall have documentation such as a dated review signature sheet, revision histories, dated electronic receipts, or registered mail receipts, that it has annually reviewed and submitted the Transmission Operator's restoration plan to its Reliability Coordinator in accordance with Requirement R3.
- R4.** Each Transmission Operator shall submit its revised restoration plan to its Reliability Coordinator for approval, when the revision would change its ability to implement its restoration plan, as follows: *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*

- 4.1. Within 90 calendar days after identifying any unplanned permanent BES modifications.
 - 4.2. Prior to implementing a planned permanent BES modification subject to its Reliability Coordinator approval requirements per EOP-006.
- M4. Each Transmission Operator shall have documentation such as dated review signature sheets, revision histories, dated electronic receipts, or registered mail receipts, that it has submitted the revised restoration plan to its Reliability Coordinator in accordance with Requirement R4.
- R5. Each Transmission Operator shall have a copy of its latest Reliability Coordinator approved restoration plan within its primary and backup control rooms so that it is available to all of its System Operators prior to its effective date. *[Violation Risk Factor = Lower] [Time Horizon = Operations Planning]*
- M5. Each Transmission Operator shall have documentation that it has made the latest Reliability Coordinator approved copy of its restoration plan, in electronic or hardcopy format, in its primary and backup control rooms and available to its System Operators prior to its effective date in accordance with Requirement R5.
- R6. Each Transmission Operator shall verify through analysis of actual events, a combination of steady state and dynamic simulations, or testing that its restoration plan accomplishes its intended function. This shall be completed at least once every five years. Such analysis, simulations or testing shall verify: *[Violation Risk Factor = Medium] [Time Horizon = Long-term Planning]*
 - 6.1. The capability of Blackstart Resources to meet the Real and Reactive Power requirements of the Cranking Paths and the dynamic capability to supply initial Loads.
 - 6.2. The location and magnitude of Loads required to control voltages and frequency within acceptable operating limits.
 - 6.3. The capability of generating resources required to control voltages and frequency within acceptable operating limits.
- M6. Each Transmission Operator shall have documentation, such as power flow outputs, that it has verified that its latest restoration plan will accomplish its intended function in accordance with Requirement R6.
- R7. Each Transmission Operator shall have Blackstart Resource testing requirements to verify that each Blackstart Resource is capable of meeting the requirements of its restoration plan. These Blackstart Resource testing requirements shall include: *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
 - 7.1. The frequency of testing such that each Blackstart Resource is tested at least once every three calendar years.
 - 7.2. A list of required tests including:

- 7.2.1. The ability to start the unit when isolated with no support from the BES or when designed to remain energized without connection to the remainder of the System.
 - 7.2.2. The ability to energize a bus. If it is not possible to energize a bus during the test, the testing entity must affirm that the unit has the capability to energize a bus such as verifying that the breaker close coil relay can be energized with the voltage and frequency monitor controls disconnected from the synchronizing circuits.
 - 7.3. The minimum duration of each of the required tests.
- M7. Each Transmission Operator shall have documented Blackstart Resource testing requirements in accordance with Requirement R7.
- R8. Each Transmission Operator shall include within its operations training program, annual System restoration training for its System Operators. This training program shall include training on the following: *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
 - 8.1. System restoration plan including coordination with its Reliability Coordinator and Generator Operators included in the restoration plan.
 - 8.2. Restoration priorities.
 - 8.3. Building of cranking paths.
 - 8.4. Synchronizing (re-energized sections of the System).
 - 8.5. Transition of Demand and resource balance within its area to the Balancing Authority.
- M8. Each Transmission Operator shall have an electronic or hard copy of the training program material provided for its System Operators for System restoration training in accordance with Requirement R8.
- R9. Each Transmission Operator, each applicable Transmission Owner, and each applicable Distribution Provider shall provide a minimum of two hours of System restoration training every two calendar years to their field switching personnel identified as performing unique tasks associated with the Transmission Operator's restoration plan that are outside of their normal tasks. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- M9. Each Transmission Operator, each applicable Transmission Owner, and each applicable Distribution Provider shall have an electronic or hard copy of the training program material provided to their field switching personnel for System restoration training and the corresponding training records including training dates and duration in accordance with Requirement R9.

- R10.** Each Transmission Operator shall participate in its Reliability Coordinator’s restoration drills, exercises, or simulations as requested by its Reliability Coordinator. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- M10.** Each Transmission Operator shall have evidence that it participated in its Reliability Coordinator’s restoration drills, exercises, or simulations as requested in accordance with Requirement R10.
- R11.** Each Transmission Operator and each Generator Operator with a Blackstart Resource shall have written Blackstart Resource Agreements or mutually agreed upon procedures or protocols, specifying the terms and conditions of their arrangement. Such Agreements shall include references to the Blackstart Resource testing requirements. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- M11.** Each Transmission Operator and Generator Operator with a Blackstart Resource shall have the dated Blackstart Resource Agreements or mutually agreed upon procedures or protocols in accordance with Requirement R11.
- R12.** Each Generator Operator with a Blackstart Resource shall have documented procedures for starting each Blackstart Resource and energizing a bus. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- M12.** Each Generator Operator with a Blackstart Resource shall have dated documented procedures on file for starting each unit and energizing a bus in accordance with Requirement R12.
- R13.** Each Generator Operator with a Blackstart Resource shall notify its Transmission Operator of any known changes to the capabilities of that Blackstart Resource affecting the ability to meet the Transmission Operator’s restoration plan within 24 hours following such change. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- M13.** Each Generator Operator with a Blackstart Resource shall provide evidence, such as dated electronic receipts or registered mail receipts, showing that it notified its Transmission Operator of any known changes to its Blackstart Resource capabilities within 24 hours of such changes in accordance with Requirement R13.
- R14.** Each Generator Operator with a Blackstart Resource shall perform Blackstart Resource tests, and maintain records of such testing, in accordance with the testing requirements set by the Transmission Operator to verify that the Blackstart Resource can perform as specified in the restoration plan. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- 14.1.** Testing records shall include at a minimum: name of the Blackstart Resource, unit tested, date of the test, duration of the test, time required to start the unit, an indication of any testing requirements not met under Requirement R7.
- 14.2.** Each Generator Operator shall provide the blackstart test results within 30 calendar days following a request from its Reliability Coordinator or Transmission Operator.

- M14.** Each Generator Operator with a Blackstart Resource shall maintain dated documentation of its Blackstart Resource test results and shall have evidence such as e-mails with receipts or registered mail receipts, that it provided these records to its Reliability Coordinator and Transmission Operator when requested in accordance with Requirement R14.
- R15.** Each Generator Operator with a Blackstart Resource shall provide a minimum of two hours of training every two calendar years to each of its operating personnel responsible for the startup of its Blackstart Resource generation units and energizing a bus. The training program shall include training on the following: *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- 15.1.** System restoration plan including coordination with the Transmission Operator
- 15.2.** The procedures documented in Requirement R12
- M15.** Each Generator Operator with a Blackstart Resource shall have an electronic or hard copy of the training program material provided to its operating personnel responsible for the startup, energizing a bus and synchronization of its Blackstart Resource generation units and a copy of its dated training records including training dates and durations showing that it has provided training in accordance with Requirement R15.
- R16.** Each Generator Operator shall participate in its Reliability Coordinator’s restoration drills, exercises, or simulations as requested by its Reliability Coordinator. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- M16.** Each Generator Operator shall have evidence that it participated in its Reliability Coordinator’s restoration drills, exercises, or simulations if requested to do so in accordance with Requirement R16.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: Regional Entity

“Compliance Enforcement Authority” means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention:

The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity 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 Transmission Operator 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:

- Approved restoration plan and any restoration plans in effect since the last compliance audit for Requirement R1, Measure M1.
- Provided the entities identified in its approved restoration plan with a description of any changes to their roles and specific tasks prior to the effective date of the plan for the current calendar year and three prior calendar years for Requirement R2, Measure M2.
- Submission of the Transmission Operator's annually-reviewed restoration plan to its Reliability Coordinator for the current calendar year and three prior calendar years for Requirement R3, Measure M3.
- Submission of a revised restoration plan to its Reliability Coordinator for all versions for the current calendar year and the prior three calendar years for Requirement R4, Measure M4.
- The current restoration plan approved by its Reliability Coordinator and any restoration plans for the last three calendar years that was made available in its control rooms for Requirement R5, Measure M5.
- The verification results for the current, approved restoration plan and the previous approved restoration plan for Requirement R6, Measure M6.
- The verification process and results for the current Blackstart Resource testing requirements and the last previous Blackstart Resource testing requirements for Requirement R7, Measure M7.
- Training program materials or descriptions for three calendar years for Requirement R8, Measure M8.
- Records of participation in all requested 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 Transmission Operator is found non-compliant for any requirement, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time period specified above, whichever is longer. The Transmission Operator, applicable Transmission Owner, and applicable Distribution Provider 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:

- Training program materials or descriptions and training records for three calendar years for Requirement R9, Measure M9.

If a Transmission Operator, applicable Transmission Owner, or applicable Distribution Provider is found non-compliant for any requirement, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time period specified above, whichever is longer. .

The Transmission Operator and Generator Operator with a Blackstart Resource 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:

- Current Blackstart Resource Agreements and any Blackstart Resource Agreements or mutually agreed upon procedures or protocols in effect since its last compliance audit for Requirement R11, Measure M11.

The Generator Operator with a Blackstart Resource 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:

- Current documentation and any documentation in effect since its last compliance audit on procedures to start each Blackstart Resource and for energizing a bus for Requirement R12, Measure M12.
- Notification to its Transmission Operator of any known changes to its Blackstart Resource capabilities over the last three calendar years for Requirement R13, Measure M13.
- The verification test results for the current set of requirements and one previous set for its Blackstart Resources for Requirement R14, Measure M14.
- Training program materials and training records for three calendar years for Requirement R15, Measure M15.

If a Generation Operator with a Blackstart Resource is found non-compliant for any requirement, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time period specified above, whichever is longer.

The Generator Operator 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:

- Records of participation in all requested Reliability Coordinator restoration drills, exercises, or simulations since its last compliance audit for Requirement R16, Measure M16.

If a Generation Operator is found non-compliant for any requirement, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time period specified above, whichever is longer. The Compliance Enforcement Authority shall keep the last compliance audit records and all requested and submitted subsequent compliance audit records.

1.3. Compliance Monitoring and Enforcement Program

As defined in the NERC Rules of Procedure, “Compliance Monitoring and Enforcement Program” refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Transmission Operator has an approved plan but failed to comply with one of the requirement parts within Requirement R1.	The Transmission Operator has an approved plan but failed to comply with two of the requirement parts within Requirement R1.	The Transmission Operator has an approved plan but failed to comply with three or more of the requirement parts within Requirement R1.	The Transmission Operator does not have an approved restoration plan. OR The Transmission Operator has an approved restoration plan, but failed to implement the applicable requirement parts within Requirement R1.
R2.	The Transmission Operator failed to provide one of the entities identified in its approved restoration plan with a description of any changes to their roles and specific tasks prior to the effective date of the plan.	The Transmission Operator failed to provide two of the entities identified in its approved restoration plan with a description of any changes to their roles and specific tasks prior to the effective date of the plan.	The Transmission Operator failed to provide three of the entities identified in its approved restoration plan with a description of any changes to their roles and specific tasks prior to the effective date of the plan.	The Transmission Operator failed to provide four or more of the entities identified in its approved restoration plan with a description of any changes to their roles and specific tasks prior to the effective date of the plan. OR Transmission Operator failed to provide at least half of the entities identified in its

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				approved restoration plan with a description of any changes to their roles and specific tasks prior to the effective date.
R3.	The Transmission Operator submitted the reviewed restoration plan within 30 calendar days after the mutually-agreed, predetermined schedule.	The Transmission Operator submitted the reviewed restoration plan more than 30 and less than or equal to 60 calendar days after the mutually-agreed, predetermined schedule.	The Transmission Operator submitted the reviewed restoration plan more than 60 and less than or equal to 90 calendar days after the mutually-agreed, predetermined schedule.	The Transmission Operator submitted the reviewed restoration plan more than 90 calendar days after the mutually-agreed, predetermined schedule.
R4.	The Transmission Operator failed to submit its revised restoration plan to its Reliability Coordinator within 90 calendar days of an unplanned permanent System BES modification.	The Transmission Operator submitted its revised restoration plan to its Reliability Coordinator between 91 calendar days and 120 calendar days of an unplanned permanent System BES modification.	The Transmission Operator submitted its revised restoration plan to its Reliability Coordinator between 121 calendar days and 150 calendar days of an unplanned permanent System BES modification.	The Transmission Operator has failed to submit its revised restoration plan to its Reliability Coordinator within 150 calendar days of an unplanned permanent System BES modification. OR The Transmission Operator failed to submit its revised restoration plan to its Reliability Coordinator prior

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				to a planned permanent BES modification.
R5.	N/A	N/A	N/A	The Transmission Operator did not make the latest Reliability Coordinator approved restoration plan available in its primary and backup control rooms prior to its effective date.
R6.	The Transmission Operator performed the verification within the required timeframe but did not comply with one of the requirement parts.	The Transmission Operator performed the verification within the required timeframe but did not comply with two of the requirement parts.	The Transmission Operator performed the verification but did not complete it within the required time frame.	The Transmission Operator did not perform the verification or it took more than six calendar years to complete the verification. OR The Transmission Operator performed the verification within the required timeframe but did not comply with any of the requirement parts.
R7.	N/A	N/A	N/A	The Transmission Operator's Blackstart Resource testing requirements do not address

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				one or more of the requirement parts of Requirement R7.
R8.	The Transmission Operator’s training does not address one of the requirement parts of Requirement R8.	The Transmission Operator’s training does not address two of the requirement parts of Requirement R8.	The Transmission Operator’s training does not address three or more of the requirement parts of Requirement R8.	The Transmission Operator has not included System restoration training in its operations training program.
R9.	The Transmission Operator, applicable Transmission Owner, or applicable Distribution Provider failed to train 5% or less of the personnel required by Requirement R9 within a two-calendar-year period.	The Transmission Operator, applicable Transmission Owner, or applicable Distribution Provider failed to train more than 5% and up to 10% of the personnel required by Requirement R9 within a two-calendar-year period.	The Transmission Operator, applicable Transmission Owner, or applicable Distribution Provider failed to train more than 10% and up to 15% of the personnel required by Requirement R9 within a two-calendar-year period.	The Transmission Operator, applicable Transmission Owner, or applicable Distribution Provider failed to train more than 15% of the personnel required by Requirement R9 within a two-calendar-year period.
R10.	N/A	N/A	N/A	The Transmission Operator has failed to comply with a request for its participation from its Reliability Coordinator.
R11.	N/A	The Transmission Operator and Generator Operator	N/A	The Transmission Operator and Generator Operator

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		with a Blackstart Resource do not reference Blackstart Resource Testing requirements in their written Blackstart Resource Agreements or mutually-agreed upon procedures or protocols.		with a Blackstart resource do not have a written Blackstart Resource Agreement or mutually-agreed upon procedure or protocol.
R12.	N/A	N/A	N/A	The Generator Operator does not have documented starting and bus energizing procedures for each Blackstart Resource.
R13.	The Generator Operator with a Blackstart Resource did not notify the Transmission Operator of a known change in Blackstart Resource capability affecting the ability to meet the Transmission Operator’s restoration plan within 24 hours but did make the notification within 48 hours.	The Generator Operator with a Blackstart Resource did not notify the Transmission Operator of a known change in Blackstart Resource capability affecting the ability to meet the Transmission Operator’s restoration plan within 48 hours but did make the notification within 72 hours.	The Generator Operator with a Blackstart Resource did not notify the Transmission Operator of a known change in Blackstart Resource capability affecting the ability to meet the Transmission Operator’s restoration plan within 72 hours but did make the notification within 96 hours.	The Generator Operator with a Blackstart Resource did not notify the Transmission Operator of a known change in Blackstart Resource capability affecting the ability to meet the Transmission Operator’s restoration plan for more than 96 hours.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R14.	<p>The Generator Operator with a Blackstart Resource performed tests and maintained records but the records did not include all of the items in Requirement R14, Part 14.1.</p> <p>OR</p> <p>The Generator Operator did not supply the Blackstart Resource testing records as requested for 31 to 60 calendar days after the request.</p>	<p>The Generator Operator with a Blackstart Resource performed tests and maintained records but did not supply the Blackstart Resource testing records as requested for 61 to 90 calendar days after the request.</p>	<p>The Generator Operator with a Blackstart Resource performed tests but either did not maintain records or did not supply the Blackstart Resource testing records as requested within 91 or more calendar days after the request.</p>	<p>The Generator Operator with a Blackstart Resource did not perform Blackstart Resource tests.</p>
R15.	<p>The Generator Operator with a Blackstart Resource did not train less than or equal to 10% of the personnel required by Requirement R15 within a two-calendar-year period.</p>	<p>The Generator Operator with a Blackstart Resource did not train more than 10% and less than or equal to 25% of the personnel required by Requirement R15 within a two-calendar-year period.</p>	<p>The Generator Operator with a Blackstart Resource did not train more than 25% and less than or equal to 50% of the personnel required by Requirement R15 within a two-calendar-year period.</p>	<p>The Generator Operator with a Blackstart Resource did not train more than 50% of the personnel required by Requirement R15 within a two-calendar-year period.</p>
R16.	N/A	N/A	N/A	<p>The Generator Operator failed to participate in its Reliability Coordinator's</p>

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				restoration drills, exercises, or simulations as requested by its Reliability Coordinator.

D. Regional Variances

None.

E. Associated Documents

[Link](#) to the Implementation Plan and other important associated documents.

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	May 2, 2007	Approved by the Board of Trustees	Revised
2		Revisions pursuant to Project 2006-03	Updated testing requirements Incorporated Attachment 1 into the requirements. 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-005-2 (approval effective 5/23/11)	
2	February 7, 2013	R3.1 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval	
2	July 1, 2013	Updated VRFs and VSLs based on June 24, 2013 approval	
2	November 21, 2013	R3.1 and associated elements approved by FERC for retirement as part of the Paragraph 81 project (Project 2013-02)	
3	February 9, 2017	Adopted by the NERC Board of Trustees	Revised

EOP-005-3 – System Restoration from Blackstart Resources

3	January 18, 2018	FERC order issued approving EOP-005-3. Docket No. RM17-12-000.	
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Rationale

Rationale for Requirement R4: As previously written, Requirement R4 addressed (in one sentence) two restoration plan update items that a Transmission Operator must perform: (1) the restoration plan must be updated within 90 calendar days after identifying any unplanned permanent System modifications and (2) the restoration plan must be updated prior to implementing a planned BES modification. The phrase: "... that would change the implementation of its restoration plan" appeared to apply to both types of changes. There was no time frame specified for updating the restoration plan for a planned BES modification; although one could infer that "90 calendar days" is intended to be the same time frame for both unplanned and planned modifications. Furthermore, the distinction between "System modifications" for unplanned changes and "BES modifications" for planned changes has been seen as confusing to some Responsible Entities.

The references to permanent unplanned and planned BES modifications that will change the ability to implement the RC-approved restoration plan are intended to require a Responsible Entity to submit a revised restoration plan to the RC when the modification would substantively change the TOP's ability to implement the restoration plan or impact the RC's ability to monitor and direct restoration efforts. The intent is not to require a TOP to submit changes that do not substantively change the restoration plan or the RCs ability to monitor and direct the restoration efforts. Examples of instances that do not require update and submission of a restoration plan include element number changes, device changes, or administrative changes that have no significance to the implementation of the plan.

In addition, the timeframes referenced in Requirement R4, Part 4.2 for a permanent planned BES modification directs the Responsible Entity to EOP-006-2, Requirement R5.1 and EOP-006-3, Requirement R5, Part 5.1, which states that the RC shall approve or disapprove the TOPs submitted restoration plan within 30 days of receipt. This allows the Responsible Entity to coordinate submission with the RC based on the RCs specific requirements.

Rationale for Requirement R6: Dynamic simulations should simulate frequency and voltage response. It is the intent of the EOP SDT that the simulation provides for the feedback of the System performance as generation and Load are added.

Rationale for Requirement R8: The addition of Requirement 8, Part 8.5 allows operating personnel to gain experience on all stages of restoration, including coordination needed transferring Demand and resource balance operations, back to the Balancing Authority in accordance with Requirement R1, Part 1.9.

Rationale for Requirement R9: The intent of "unique tasks" are those tasks that are defined by the Transmission Operator, the Transmission Owner, and the Distribution Provider.

Appendix EOP-005-3-QC-1

Specific provisions applicable in Québec for standard EOP-005-3 – System Restoration from Blackstart Resources

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

A. Introduction

1. **Title:** No specific provisions.
2. **Number:** No specific provisions.
3. **Purpose:** No specific provisions.
4. **Applicability:**
 - 4.1. **Functional Entities**
No specific provisions.
5. **Effective date:**
 - 5.1. Adoption of the standard by the Régie de l'énergie: November 22, 2019
 - 5.2. Adoption of this appendix by the Régie de l'énergie: November 22, 2019
 - 5.3. Effective date of the standard and of this appendix in Québec: January 1st, 2021
6. **Standard-Only Definition:**
No specific provisions.

B. Requirements and Measures

Specific provision applicable to Requirement R16:

Requirement R16 applies only to Generator Operators operating resources needed for system restoration and identified in the Transmission Operator's restoration plan.

C. Compliance

1. **Compliance Monitoring Process**
 - 1.1. **Compliance Enforcement Authority**
In Québec, "Compliance Enforcement Authority" means the Régie de l'énergie in its roles of monitoring and enforcing compliance with respect to the Reliability Standard and to this appendix.
 - 1.2. **Evidence Retention**
No specific provisions.
 - 1.3. **Compliance Monitoring and Enforcement Program**
The Régie de l'énergie establishes the monitoring processes used to evaluate data or information for the purpose of determining compliance or non-compliance with the Reliability Standard and with this appendix.

Violation Severity Levels

No specific provisions.

Appendix EOP-005-3-QC-1

**Specific provisions applicable in Québec for standard
EOP-005-3 – System Restoration from Blackstart Resources**

High VSL for Requirement 9, erratum correction: added “within a” in the following part of the sentence “the personnel required by Requirement R9 within a two-calendar-year period.”

R9.	The Transmission Operator, applicable Transmission Owner, or applicable Distribution Provider failed to train 5% or less of the personnel required by Requirement R9 within a two-calendar-year period.	The Transmission Operator, applicable Transmission Owner, or applicable Distribution Provider failed to train more than 5% and up to 10% of the personnel required by Requirement R9 within a two-calendar-year period.	The Transmission Operator, applicable Transmission Owner, or applicable Distribution Provider failed to train more than 10% and up to 15% of the personnel required by Requirement R9 within a two-calendar-year period.	The Transmission Operator, applicable Transmission Owner, or applicable Distribution Provider failed to train more than 15% of the personnel required by Requirement R9 within a two-calendar-year period.
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D. Regional Variances

No specific provisions.

E. Associated Documents

No specific provisions.

Version history

Version	Date	Action	Change tracking
1	November 22, 2019	New appendix	New

A. Introduction

1. **Title:** System Restoration Coordination
2. **Number:** EOP-006-3
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. **Functional Entities:**
 - 4.1.1. Reliability Coordinators
5. **Proposed Effective Date:** See the Implementation Plan for EOP-006-3.
6. **Standard-Only Definition:** None

B. Requirements and Measures

- R1. Each Reliability Coordinator shall develop and implement 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 shutdown 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 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, Real-time Operations]*
 - 1.1. 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.
 - 1.2. Criteria and conditions for re-establishing interconnections with other Transmission Operators within its Reliability Coordinator Area, with Transmission Operators in other Reliability Coordinator Areas, and with other Reliability Coordinators.
 - 1.3. Reporting requirements for the entities within the Reliability Coordinator Area during a restoration event.
 - 1.4. Criteria for sharing information regarding restoration with neighboring Reliability Coordinators and with Transmission Operators and Balancing Authorities within its Reliability Coordinator Area.
 - 1.5. 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.

- 1.6.** Criteria for transferring operations and authority back to the Balancing Authority.
 - M1.** Each Reliability Coordinator shall have available a dated copy of its restoration plan and will have evidence, such as operator logs or other operating documentation, voice recordings, or other communication documentation to show that its restoration plan was implemented in accordance with Requirement R1.
 - 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]*
 - M2.** Each Reliability Coordinator shall provide evidence such as electronic receipts, posting to a secure website with notification to affected entities, or registered mail receipts, that its most recent restoration plan has been distributed in accordance with Requirement R2.
 - 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]*
 - 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.
 - R4.** Each Reliability Coordinator shall review its neighboring Reliability Coordinator's restoration plans and provide written notification of any conflicts discovered during that review within 60 calendar days of receipt. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
 - 4.1.** If a Reliability Coordinator finds conflicts between its restoration plans and any of its neighbors, the conflicts shall be resolved within 30 calendar days of receipt of written notification.
 - M4.** Each Reliability Coordinator shall provide evidence such as dated review signature sheets or electronic receipt that it has reviewed its neighboring Reliability Coordinator's restoration plans and resolved any conflicts within the timing requirements of Requirement R4 and Requirement R4, Part 4.1.
 - 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]*
 - 5.1.** 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 provide notification to the Transmission Operator of approval or disapproval, with stated reasons, of the Transmission Operator's submitted restoration plan within 30 calendar days following the receipt of the restoration plan from the Transmission Operator.

- M5.** Each Reliability Coordinator shall provide evidence such as a dated review signature sheet or electronic receipt that it has reviewed, approved or disapproved, and notified its Transmission Operators within 30 calendar days following the receipt of the restoration plan from the Transmission Operator in accordance with Requirement R5.
- 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 effective date. *[Violation Risk Factor = Lower] [Time Horizon = Operations Planning]*
- M6.** Each Reliability Coordinator shall have documentation such as electronic 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 effective date in accordance with Requirement R6.
- R7.** Each Reliability Coordinator shall include within its operations training program, annual System restoration training for its System Operators. This training program shall address the following: *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
 - 7.1.** The coordination role of the Reliability Coordinator; and
 - 7.2.** Re-establishing the Interconnection.
- M7.** Each Reliability Coordinator shall have an electronic copy or hard copy of its training records available showing that it has provided training in accordance with Requirement R7.
- R8.** 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]*
 - 8.1.** 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 once every two calendar years.
- M8.** Each Reliability Coordinator shall have evidence, such as dated electronic documents, that it conducted two System restoration drills, exercises, or simulations per calendar year in accordance with Requirement R8. And each Reliability Coordinator shall have

evidence that the Reliability Coordinator requested each applicable Transmission Operator and Generator Operator to participate per Requirement R8 and Requirement R8, Part 8.1.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority:

“Compliance Enforcement Authority” means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention:

The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity 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 effect since the last compliance audit for Requirement R1, Measure M1.
- Distribution of its most recent restoration plan and any restoration plans in effect 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 effect for the last three calendar years was made available in its control rooms for Requirement R6, Measure M6.
- Actual training program materials or descriptions for three calendar years for Requirements R7, Measure M7.

- 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 R8, Measure M8.

If a Reliability Coordinator is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time period specified above, whichever is longer.

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

1.3. Compliance Monitoring and Enforcement Program

As defined in the NERC Rules of Procedure, “Compliance Monitoring and Enforcement Program” refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Reliability Coordinator failed to include one requirement part of Requirement R1 within its restoration plan.	The Reliability Coordinator failed to include two requirement parts of Requirement R1 within its restoration plan.	The Reliability Coordinator failed to include three of the requirements parts of Requirement R1 within its restoration plan.	The Reliability Coordinator failed to include four or more of the requirement parts within its restoration plan. OR The Reliability Coordinator had a restoration plan, but failed to implement it.
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.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R4.	The Reliability Coordinator reviewed the submitted restoration plans from its neighboring Reliability Coordinators within 60 calendar days of receipt, and resolved conflicts between 31 and 60 calendar days following written notification.	The Reliability Coordinator reviewed the submitted restoration plans from its neighboring Reliability Coordinators within 60 calendar days of receipt and resolved conflicts between 61 and 90 calendar days following written notification.	The Reliability Coordinator reviewed the submitted restoration plans from its neighboring Reliability Coordinators within 60 calendar days of receipt and resolved conflicts 91 or more calendar days following written notification.	The Reliability Coordinator did not review the submitted restoration plans from its neighboring Reliability Coordinators within 60 calendar days of receipt.
R5.	The Reliability Coordinator did not review and approve/disapprove the submitted restoration plans, with stated reasons for disapproval, 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 did not review and approve/disapprove the submitted restoration plans, with stated reasons for disapproval, 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 did not review and approve/disapprove the submitted restoration plans, with stated reasons for disapproval, 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 did not review and approve/disapprove the submitted restoration plans, with stated reasons for disapproval, 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

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	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 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 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.	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 effective date.	The Reliability Coordinator did not have a copy of its latest restoration plan within its primary and backup control rooms prior to the effective date.
R7.	N/A	N/A	The Reliability Coordinator included the annual System restoration training within its operations training program,	The Reliability Coordinator did not include the annual System restoration training

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
			but did not address both of the requirement parts.	within its operations training program.
R8.	N/A	<p>The Reliability Coordinator only held one restoration drill, exercise, or simulation during the calendar year.</p> <p>OR</p> <p>The Reliability Coordinator did not request each applicable Transmission Operator or Generator Operator identified in its restoration plan to participate in a drill, exercise, or simulation at least once every two calendar years.</p>	N/A	The Reliability Coordinator did not hold a restoration drill, exercise, or simulation during the calendar year.

D. Regional Variances

None.

E. Associated Documents

[Link](#) to the Implementation Plan and other important associated documents.

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	Nov. 1, 2006	Adopted by Board of Trustees	Revised
2		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.	
3	February 9, 2017	Adopted by the NERC Board of Trustees	Revised
3	January 18, 2018	FERC order issued approving EOP-006-3. Docket No. RM17-12-000.	

Appendix EOP-006-3-QC-1

Specific provisions applicable in Québec for standard EOP-006-3 – System Restoration Coordination

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

A. Introduction

1. **Title:** No specific provisions.
2. **Number:** No specific provisions.
3. **Purpose:** No specific provisions.
4. **Applicability:**
 - 4.1. **Functional Entities**
No specific provisions.
5. **Effective date:**
 - 5.1. Adoption of the standard by the Régie de l'énergie: November 22, 2019
 - 5.2. Adoption of this appendix by the Régie de l'énergie: November 22, 2019
 - 5.3. Effective date of the standard and of this appendix in Québec: January 1st, 2021
6. **Standard-Only Definition:**
No specific provisions.

B. Requirements and Measures

No specific provisions.

Requirement R4 and Measure M4, erratum correction: changed “Coordinator’s” to “Coordinators”

R4. Each Reliability Coordinator shall review its neighboring Reliability Coordinators’ restoration plans and provide written notification of any conflicts discovered during that review within 60 calendar days of receipt. [*Violation Risk Factor = Medium*] [*Time Horizon = Operations Planning*]

4.1. If a Reliability Coordinator finds conflicts between its restoration plans and any of its neighbors, the conflicts shall be resolved within 30 calendar days of receipt of written notification.

M4. Each Reliability Coordinator shall provide evidence such as dated review signature sheets or electronic receipt that it has reviewed its neighboring Reliability Coordinators’ restoration plans and resolved any conflicts within the timing requirements of Requirement R4 and Requirement R4, Part 4.1.”

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

In Québec, “Compliance Enforcement Authority” means the Régie de l'énergie in its roles of monitoring and enforcing compliance with respect to the Reliability Standard and to this appendix.

1.2. Evidence Retention

Appendix EOP-006-3-QC-1

Specific provisions applicable in Québec for standard EOP-006-3 – System Restoration Coordination

No specific provisions.

1.3. Compliance Monitoring and Enforcement Program

The Régie de l'énergie establishes the monitoring processes used to evaluate data or information for the purpose of determining compliance or non-compliance with the Reliability Standard and with this appendix.

Violation Severity Levels

No specific provisions.

D. Regional Variances

No specific provisions.

E. Associated Documents

No specific provisions.

Version history

Version	Date	Action	Change tracking
1	November 22, 2019	New appendix	New

A. Introduction

1. **Title:** Loss of Control Center Functionality
2. **Number:** EOP-008-2
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 Entities:**
 - 4.1.1. Reliability Coordinator
 - 4.1.2. Transmission Operator
 - 4.1.3. Balancing Authority
5. **Effective Date:** See the Implementation Plan for EOP-008-2.
6. **Standard-Only Definition:** None

B. Requirements and Measures

- 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: *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
 - 1.1. The location and method of implementation for providing backup functionality.
 - 1.2. A summary description of the elements required to support the backup functionality. These elements shall include:
 - 1.2.1. Tools and applications to ensure that System Operators have situational awareness of the BES.
 - 1.2.2. Data exchange capabilities.
 - 1.2.3. Interpersonal 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:
- 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.
- M1.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have a dated, current, and in effect Operating Plan for backup functionality in accordance with Requirement R1, in electronic or hardcopy format.
- 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]*
- M2.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have a dated, current, and in effect 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.
- 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 are applicable to the 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
- 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 are applicable to the primary control center functionality in accordance with Requirement R3.
- 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 are applicable to a Balancing Authority's and Transmission Operator's primary control center functionality. 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
- 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 are applicable to a Balancing Authority's or Transmission Operator's primary control center functionality in accordance with Requirement R4.
- 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.
- M5.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have evidence that its dated, current, and in effect 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.
- 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]*
- 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.
- 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.

- 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.
- 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]*
- 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.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority:

“Compliance Enforcement Authority” means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention:

The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity 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.

- Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall retain its dated, current, in effect 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 effect 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 are applicable to the 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 are applicable to a Balancing Authority's and Transmission Operator's primary control center functionality 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 effect 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 effect 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 calendar year and the previous calendar years, 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 effect document and any such documents in effect 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.

1.3. Compliance Monitoring and Enforcement Program

As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The responsible entity had a current Operating Plan for backup functionality, but the plan was missing one of the requirement's six parts (Requirement R1, 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 (Requirement R1, 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 (Requirement R1, 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 (Requirement R1, 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

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				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 are applicable to the 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 sufficient for maintaining compliance with all Reliability Standards that are applicable to a Balancing Authority's and Transmission Operator's

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				primary control center functionality.
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	The responsible entity conducted an annual test of	The responsible entity conducted an annual test of	The responsible entity did not conduct an annual test

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	<p>its Operating Plan for backup functionality, but it did not document the results.</p> <p>OR,</p> <p>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.</p>	<p>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.</p>	<p>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</p> <p>OR,</p> <p>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 more than or equal to 0.5 continuous hours.</p>	<p>of its Operating Plan for backup functionality.</p> <p>OR,</p> <p>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.</p>
R8.	<p>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</p>	<p>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</p>	<p>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</p>	<p>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</p>

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	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.	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.	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.	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.

D. Regional Variances

None.

E. Associated Documents

[Link](#) to the Implementation Plan and other important associated documents.

Version History

Version	Date	Action	Change Tracking
1	2009 - 2010	Project 2006-04: Revisions	Major re-write to accommodate changes noted in project file
1	August 5, 2010	Project 2006-04: Adopted by the Board	
1	April 21, 2011	Project 2006-04: FERC Order issued approving EOP-008-1 (approval effective June 27, 2011)	
1	July 1, 2013	Project 2006-04: Updated VRFs and VSLs based on June 24, 2013 approval	
2	July 9, 2017	Adopted by the NERC Board of Trustees	Revised
2	January 18, 2018	FERC order issued approving EOP-008-2. Docket No. RM17-12-000.	

Rationale

Rationale for Requirement R1: The phrase "data exchange capabilities" is replacing "data communications" in Requirement R1, Part 1.2.2 for the following reasons:

COM-001-1 (no longer enforceable) covered telecommunications, which could be viewed as covering both voice and data. COM-001-2.1 (currently enforceable) focuses on "Interpersonal Communication" and does not address data.

The topic of data exchange has historically been covered in the IRO / TOP Standards. Most recently the revisions to the standards that came out of Project 2014-03 Revisions to TOP and IRO Standards use the phrase "data exchange capabilities." The rationale included in the IRO-002-4 standard discusses the need to retain the topic of data exchange, as it is not addressed in the COM standards.

**Specific provisions applicable in Québec for standard
EOP-008-2 – Loss of Control Center Functionality**

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

A. Introduction

1. **Title:** No specific provisions.
2. **Number:** No specific provisions.
3. **Purpose:** No specific provisions.
4. **Applicability:**
 - 4.1. **Functional Entities**
No specific provisions.
5. **Effective date:**
 - 5.1. Adoption of the standard by the Régie de l'énergie: November 22, 2019
 - 5.2. Adoption of this appendix by the Régie de l'énergie: November 22, 2019
 - 5.3. Effective date of the standard and of this appendix in Québec: January 1st, 2021
6. **Standard-Only Definition:**
No specific provisions.

B. Requirements and Measures

Replace “BES” by “RTP” in this section.

Requirement 3, erratum correction: added the word “that” in the following part of the sentence “all Reliability Standards that are applicable to the primary control center functionality ”

“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 are applicable to the 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”

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

In Québec, “Compliance Enforcement Authority” means the Régie de l'énergie in its roles of monitoring and enforcing compliance with respect to the Reliability Standard and to this appendix.

1.2. Evidence Retention

Appendix EOP-008-2-QC-1

Specific provisions applicable in Québec for standard EOP-008-2 – Loss of Control Center Functionality

No specific provisions.

1.3. Compliance Monitoring and Enforcement Program

The Régie de l'énergie establishes the monitoring processes used to evaluate data or information for the purpose of determining compliance or non-compliance with the Reliability Standard and with this appendix.

Violation Severity Levels

No specific provisions.

D. Regional Variances

No specific provisions.

E. Associated Documents

No specific provisions.

Version history

Version	Date	Action	Change tracking
1	November 22, 2019	New appendix	New