

A. Introduction

1. **Title:** System Protection Coordination

2. **Number:** PRC-001-1.1(ii)

3. **Purpose:**

To ensure system protection is coordinated among operating entities.

4. **Applicability**

4.1. Balancing Authorities

4.2. Transmission Operators

4.3. Generator Operators

5. **Effective Date:**

See the Implementation Plan for PRC-001-1.1(ii).

B. Requirements

R1. Each Transmission Operator, Balancing Authority, and Generator Operator shall be familiar with the purpose and limitations of Protection System schemes applied in its area.

R2. Each Generator Operator and Transmission Operator shall notify reliability entities of relay or equipment failures as follows:

R2.1. If a protective relay or equipment failure reduces system reliability, the Generator Operator shall notify its Transmission Operator and Host Balancing Authority. The Generator Operator shall take corrective action as soon as possible.

R2.2. If a protective relay or equipment failure reduces system reliability, the Transmission Operator shall notify its Reliability Coordinator and affected Transmission Operators and Balancing Authorities. The Transmission Operator shall take corrective action as soon as possible.

R3. A Generator Operator or Transmission Operator shall coordinate new protective systems and changes as follows.

R3.1. Each Generator Operator shall coordinate all new protective systems and all protective system changes with its Transmission Operator and Host Balancing Authority.

- Requirement R3.1 is not applicable to the individual generating units of dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition.

R3.2. Each Transmission Operator shall coordinate all new protective systems and all protective system changes with neighboring Transmission Operators and Balancing Authorities.

- R4.** Each Transmission Operator shall coordinate Protection Systems on major transmission lines and interconnections with neighboring Generator Operators, Transmission Operators, and Balancing Authorities.
- R5.** A Generator Operator or Transmission Operator shall coordinate changes in generation, transmission, load or operating conditions that could require changes in the Protection Systems of others:
 - R5.1.** Each Generator Operator shall notify its Transmission Operator in advance of changes in generation or operating conditions that could require changes in the Transmission Operator's Protection Systems.
 - R5.2.** Each Transmission Operator shall notify neighboring Transmission Operators in advance of changes in generation, transmission, load, or operating conditions that could require changes in the other Transmission Operators' Protection Systems.
- R6.** Each Transmission Operator and Balancing Authority shall monitor the status of each Special Protection System in their area, and shall notify affected Transmission Operators and Balancing Authorities of each change in status.

C. Measures

- M1.** Each Generator Operator and Transmission Operator shall have and provide upon request evidence that could include but is not limited to, revised fault analysis study, letters of agreement on settings, notifications of changes, or other equivalent evidence that will be used to confirm that there was coordination of new protective systems or changes as noted in Requirements 3, 3.1, and 3.2.
- M2.** Each Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, documentation, electronic logs, computer printouts, or computer demonstration or other equivalent evidence that will be used to confirm that it monitors the Special Protection Systems in its area. (Requirement 6 Part 1)
- M3.** Each Transmission Operator and Balancing Authority shall have and provide upon request evidence that could include but is not limited to, operator logs, phone records, electronic-notifications or other equivalent evidence that will be used to confirm that it notified affected Transmission Operator and Balancing Authorities of changes in status of one of its Special Protection Systems. (Requirement 6 Part 2)

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Monitoring Responsibility

Regional Reliability Organizations shall be responsible for compliance monitoring.

1.2. Compliance Monitoring and Reset Time Frame

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)

The Performance-Reset Period shall be 12 months from the last finding of non-compliance.

1.3. Data Retention

Each Generator Operator and Transmission Operator shall have current, in-force documents available as evidence of compliance for Measure 1.

Each Transmission Operator and Balancing Authority shall keep 90 days of historical data (evidence) for Measures 2 and 3.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

1.4. Additional Compliance Information

None.

2. Levels of Non-Compliance for Generator Operators:

2.1. Level 1: Not applicable.

2.2. Level 2: Not applicable.

2.3. Level 3: Not applicable.

2.4. Level 4: Failed to provide evidence of coordination when installing new protective systems and all protective system changes with its Transmission Operator and Host Balancing Authority as specified in R3.1.

3. Levels of Non-Compliance for Transmission Operators:

3.1. Level 1: Not applicable.

3.2. Level 2: Not applicable.

3.3. Level 3: Not applicable.

3.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:

3.4.1 Failed to provide evidence of coordination when installing new protective systems and all protective system changes with neighboring Transmission Operators and Balancing Authorities as specified in R3.2.

3.4.2 Did not monitor the status of each Special Protection System, or did not notify affected Transmission Operators, Balancing Authorities of changes in special protection status as specified in R6.

4. Levels of Non-Compliance for Balancing Authorities:

4.1. Level 1: Not applicable.

4.2. Level 2: Not applicable.

4.3. Level 3: Not applicable.

4.4. Level 4: Did not monitor the status of each Special Protection System, or did not notify affected Transmission Operators, Balancing Authorities of changes in special protection status as specified in R6.

E. Regional Differences

None identified.

Version History

| Version | Date | Action | Change Tracking |
|---------|-------------------|---|--|
| 0 | April 1, 2005 | Effective Date | New |
| 0 | August 8, 2005 | Removed “Proposed” from Effective Date | Errata |
| 0 | August 25, 2005 | Fixed Standard number in Introduction from PRC-001-1 to PRC-001-0 | Errata |
| 1 | November 1, 2006 | Adopted by the NERC Board of Trustees | Revised |
| 1.1 | April 11, 2012 | Errata adopted by the Standards Committee; (Capitalized “Protection System” in accordance with Implementation Plan for Project 2007-17 approval of revised definition of “Protection System”) | Errata associated with Project 2007-17 |
| 1.1 | September 9, 2013 | Informational filing submitted to reflect the revised definition of Protection System in accordance with the Implementation Plan for the revised term. | |

| | | | |
|---------|-------------------|--|---|
| 1.1(i) | November 13, 2014 | Adopted by the NERC Board of Trustees | Replaced references to Special Protection System and SPS with Remedial Action Scheme and RAS |
| 1.1(ii) | February 12, 2015 | Adopted by the NERC Board of Trustees | Standard revised in Project 2014-01: Applicability revised to clarify application of requirements to BES dispersed power producing resources |
| 2 | May 9, 2012 | Adopted by Board of Trustees | Deleted Requirements R2, R5, and R6. |
| 1.1(ii) | May 29, 2015 | FERC Letter Order in Docket No. RD15-3-000 approving PRC-001-1.1(ii) | Modifications to adjust the applicability to owners of dispersed generation resources. |

Rationale:

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon BOT approval, the text from the rationale text boxes was moved to this section.

Rationale for the Applicability Exclusion in Requirement R3.1

Coordination of new or changes to protective systems associated with dispersed power producing resources identified through Inclusion I4 of the BES definition are typically performed on the interconnecting facilities. New or changes to protective systems associated with these facilities should be coordinated with the TOP as these protective systems typically must be closely coordinated with the transmission protective systems to ensure the overall protection systems operates as designed. While the protective systems implemented on the individual generating units of dispersed power producing resources at these dispersed power producing facilities (i.e. individual wind turbines or solar panels/inverters) may in some cases need to be coordinated with other protective systems within the same dispersed power producing facility, new or changes to these protective systems do not need to be coordinated with the

transmission protective systems, as this coordination would not provide reliability benefits to the BES.

Standard PRC-001-1.1(ii) — System Protection Coordination

Appendix QC-PRC-001-1.1(ii) Provisions specific to Standard PRC-001-1.1(ii) applicable in Québec

This appendix establishes specific provisions for 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 the appendix differ, the appendix shall prevail.

A. Introduction

1. **Title:** System Protection Coordination

2. **Number:** PRC-001-1.1(ii)

3. **Purpose:** No specific provisions.

4. **Applicability**

Functional Entities

No specific provisions.

Facilities

This standard applies only to the facilities of the Main Transmission System (RTP).

5. **Effective Date**

5.1. Adoption of the standard by the Régie de l'énergie : Month xx, 2018

5.2. Adoption of the appendix by the Régie de l'énergie: Month xx, 2018

5.3. Effective date of the standard and its appendix in Québec: January 1, 2019

The following changes to the Glossary become effective at the same time as version 1.1(ii) of the standard (PRC-001): changes to the terms Bulk Electric System (BES), Protection Systems, and Special Protection System (SPS); addition of the term Dispersed Power Producing Resources.

B. Requirements

Protection coordination as described in requirements R3 (including parts R3.1 and R3.2) and R4 covers:

- Failure protection (or backup or emergency protection) for the RTP element that trips an element that is not part of the RTP to which it connects, if such protection exists.
- Failure protection (or backup or emergency protection) for a non-RTP element that trips an RTP element, if such protection exists.

For Requirement R6, the term “Special Protection System (SPS)” must be replaced by the term “Remedial Action Scheme (RAS).”

C. Measures

For measures M2 and M3, the term “Special Protection System (SPS)” must be replaced by the term “Remedial Action Scheme (RAS).”

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Monitoring Responsibility

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

1.2. Compliance Monitoring and Reset Time Frame

No specific provisions.

1.3. Data Retention

No specific provisions.

1.4. Additional Compliance Information

No specific provisions.

2. Levels of Non-Compliance for Generator Operators

No specific provisions.

3. Levels of Non-Compliance for Transmission Operators

For Part 3.4.2, the term "Special Protection System (SPS)" must be replaced by the term "Remedial Action Scheme (RAS)."

4. Levels of Non-Compliance for Balancing Authorities

For Part 4.4, the term "Special Protection System (SPS)" must be replaced by the term "Remedial Action Scheme (RAS)."

E. Regional Differences

No specific provisions.

Revision History

| Revision | Date | Action | Change Tracking |
|----------|----------|--------------|-----------------|
| 0 | XX, 2018 | New appendix | — |
| | | | |