

Appendix PRC-023-6-QC-1
Specific provisions applicable in Québec for standard
PRC-023-6 – Transmission Relay Loadability

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:** In the application of this standard, all reference to the term “Bulk Electric System” or “BES” shall be replaced by the terms “Main Transmission System” or “RTP” respectively.

4.1. Functional Entity

No specific provisions.

4.2. Circuits:

4.2.1 Circuits Subject to Requirements R1 -R5

- 4.2.1.1** Transmission lines operated at 200 kV and above that are part of the Main Transmission System (RTP), except Elements that connect the GSU transformers to the Transmission system that are used exclusively to export energy directly from a generating unit or generating plant of the RTP. Elements may also supply generating plant loads.
- 4.2.1.2** Transmission lines operated at 100 kV to 200 kV that are part of the RTP and selected by the Planning Coordinator in accordance with Requirement R6.
- 4.2.1.3** Transmission lines operated below 100 kV that are part of the RTP and selected by the Planning Coordinator in accordance with Requirement R6.
- 4.2.1.4** Transformers with low voltage terminals connected at 200 kV and above that are part of the RTP.
- 4.2.1.5** Transformers with low voltage terminals connected at 100 kV to 200 kV that are part of the RTP and selected by the Planning Coordinator in accordance with Requirement R6.
- 4.2.1.6** Transformers with low voltage terminals connected below 100 kV that are part of the RTP and selected by the Planning Coordinator in accordance with Requirement R6.

4.2.2 Circuits Subject to Requirement R6

- 4.2.2.1** Transmission lines operated at 100 kV to 200 kV that are part of the RTP and transformers with low voltage terminals connected at 100 kV to 200 kV that are part of the RTP, except Elements that connect the GSU transformers to the Transmission system that are used exclusively to

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export energy directly from an RTP generating unit or generating plant. Elements may also supply generating plant loads.

4.2.2.2 Transmission lines operated below 100 kV and transformers with low voltage terminals connected below 100 kV that are part of the RTP, except Elements that connect the GSU transformers to the Transmission system that are used exclusively to export energy directly from an RTP generating unit or generating plant. Elements may also supply generating plant loads.

5. Effective dates:

- 5.1.** Adoption of the standard by the Régie de l'énergie: Month xx, 20xx
- 5.2.** Adoption of the appendix by the Régie de l'énergie: Month xx, 20xx
- 5.3.** Effective date of the standard and its appendix in Québec: Month xx, 20xx

Requirements	Applicability	Date of implementation in Québec
R1 to R5	Each TO, GO or DP with circuits identified by the Planning Coordinator in accordance with Requirement R6	The later of the following dates: First day of the first calendar quarter 39 months following notification by the Planning Coordinator of a circuit's inclusion on a list of circuits subject to PRC-023-4 or PRC-023-5, per the provisions of Attachment B OR First day of the first calendar year during which a criterion from Attachment B applies, unless the Planning Coordinator removes the circuit from the list of circuits selected prior to the applicable effective date.
R6	Each Planning Coordinator shall conduct its first assessment under PRC-023-6	Whichever occurs first: Within the next calendar year after the effective date of PRC-023-6 OR Within 15 months of their last assessment under PRC-023-4 or PRC-023-5

B. Requirements and Measures

Specific provision applicable to Requirement R1:

- R1.** Each Transmission Owner, Generator Owner and Distribution Provider shall use one of the following criteria (Requirement R1, criteria 1 through 13) for any specific circuit terminal to prevent the phase protective relay settings from limiting transmission system loadability while

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maintaining reliable protection of the RTP for all fault conditions. Each Transmission Owner, Generator Owner and Distribution Provider shall evaluate relay loadability at 0.85 per unit voltage and a power factor angle of 30 degrees. *[Violation Risk Factor: High] [Time Horizon: Long Term Planning]*.

Specific provision applicable to criteria 10 and 11

10. Set transformer fault protection relays and transmission line relays on transmission lines terminated only with a transformer so that the relays do not operate at or below the greater of:

- No specific provisions.
- One of the following applicable values:
 - 115% of the highest operator established emergency transformer rating, if the operator has established one, or
 - 100% of the highest long duration emergency rating established by the Transformer Owner, if the Transformer Owner has established one and the operator has not established a highest transformer emergency rating.

10.1 No specific provisions.

11. For transformer overload protection relays that do not comply with the loadability component of Requirement R1 criterion 10, set the relays according to one of the following:

- Set the relays to allow the transformer to be operated at an overload level as defined in criterion 10 for at least 15 minutes to provide time for the operator to take controlled action to relieve the overload.
- No specific provisions.

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.

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Violation Severity Levels

Specific provision applicable to Requirement R1:

	Low	Moderate	High	Severe
R1	Not applicable	Not applicable	Not applicable	<p>The responsible entity did not use any of the following criteria (Requirement R1 criteria 1 through 13) for any specific circuit terminal to prevent the phase protective relay settings from limiting transmission system loadability while maintaining reliable protection of the RTP for all fault conditions.</p> <p>OR</p> <p>The responsible entity did not evaluate relay loadability at 0.85 per unit voltage and a power factor angle of 30 degrees.</p>

D. Regional Variances

No specific provisions.

E. Associated Documents

No specific provisions.

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PRC-023-6 – Attachment A

No specific provisions.

PRC-023-6 – Attachment B

Circuits to Evaluate

- Transmission lines operated at 100 kV to 200 kV and transformers with low voltage terminals connected at 100 kV to 200 kV that are part of the RTP.
- Transmission lines operated below 100 kV and transformers with low voltage terminals connected below 100 kV that are part of the RTP.

Criteria

No specific provisions.

Version history

Version	Date	Action	Change tracking
1	Month xx, 20xx	New appendix as per decision D-2xxx-xxx	New