
Project QC-2024-07

Modifications to PRC-023

1. OVERVIEW OF THE STANDARD

1.1. Applicability

The following table lists the functional entities to which PRC-023-6, the Reliability Standard proposed for adoption, applies.

Standard	Functions
PRC-023-6	<i>Distribution Provider (DP)</i> <i>Generator Owner (GO)</i> <i>Planning Coordinator (PC)</i> <i>Transmission Owner (TO)</i>

The Reliability Coordinator in Quebec (hereinafter, the “Coordinator”) emphasizes that there is no change between the applicability of the proposed standards and their previous versions.

1.2. Purpose of the standards

This section describes the purpose of each standard covered by this request. The title and purpose of the standard are as follows:

- **PRC-023-6 – Transmission Relay Loadability:** Protective relay settings shall not limit transmission loadability; not interfere with system operators’ ability to take remedial action to protect system reliability and; be set to reliably detect all fault conditions and protect the electrical network from these faults.

1.3. Regulatory context

i. NERC Project 2021-05 – Modifications to PRC-023

Pursuant to section 85.6 of the Act Respecting the Régie de l’énergie (hereinafter, the “Act”), the Coordinator submits for adoption by the Régie de l’énergie (hereinafter, the “Régie”) Reliability Standard PRC-023-6 as set forth by the North American Electric Reliability Corporation (hereinafter, “NERC”) in Project 2021-05¹ (Modifications to PRC-023). This is the only submission for this project. Reliability Standard PRC-023-6 was developed to address specific issues identified by industry subject matter experts in the PRC-023-5 Reliability Standard regarding Requirement R2. These specific issues are further explained in section 2 of this document.

¹ NERC Project 2021-05, retrieved on October 9, 2024 at <https://www.nerc.com/pa/Stand/Pages/Project-2021-05-Modifications-to-PRC-023.aspx>

Reliability Standard PRC-023-6 was adopted by the NERC Board of Trustees on February 16, 2023, and approved by the Federal Energy Regulatory Commission (FERC) on January 24, 2024, through Letter Order No. RD23-5-000².

ii. Affected Reliability Standard in Québec

PRC-023-6 Reliability Standard replaces Standard PRC-023-5, adopted by the Régie in Decision D-2024-060³. Standard PRC-023-5 comes into effect in Québec on October 1st, 2026.

1.4. Specific provisions for Québec

The Coordinator proposes carrying over the Québec-specific provisions in the preceding version of the Reliability Standard (PRC-023-5) already adopted by the Régie in Decision D-2024-060, including the following specific provision in the “Applicability” section:

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

The Coordinator is of the opinion that this special provision is still applicable since the scope of application equivalent to the BES for Québec and recognized by the Régie is the RTP.

Finally, the Quebec-specific provision carried over for requirement R1 (criteria 10 and 11) under Requirements and Measures remains unchanged in the current context in Québec, since installations covered by this standard are part of the RTP. The Coordinator is of the opinion that this special provision remains applicable since its initial adoption by the Régie in Decision D-2017-110⁴.

1.5. Proposed effective dates

The NERC Project 2021-05⁵ Implementation Plan proposes that Reliability Standard PRC-023-6 become effective the later of the first day of the first calendar quarter after its regulatory approval or the effective date of Reliability Standard PRC-023-5. In the United States, PRC-023-5 and PRC-023-6 came into effect on the same day, with an effective date of April 1, 2024⁶. Consequently, PRC-023-5 never came into effect in the United States.

The Coordinator considers that NERC’s implementation plan meets the Régie’s requirement that standards come into force on the first day of a calendar quarter⁷ with at least sixty (60)⁸ days between the date of the standard’s adoption and its effective date.

² FERC Order Letter No. RD23-5-000, retrieved on October 9, 2024 at

https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20240124-3062

³ Régie Decision D-2024-060, Docket R-4229-2023, retrieved on October 9, 2024 at

https://www.regie-energie.qc.ca/fr/participants/dossiers/R-4229-2023/doc/R-4229-2023-A-0020-Dec-Dec-2024_06_20.pdf

⁴ Régie Decision D-2017-110, Docket R-3944-2015, retrieved on October 9, 2024 at

https://www.regie-energie.qc.ca/fr/participants/dossiers/R-3949-2015/doc/R-3949-2015-A-0058-Dec-Dec-2017_09_27.pdf

⁵ NERC Project 2021-05 Implementation Plan, retrieved on October 9, 2024 at

https://www.nerc.com/pa/Stand/202105%20Modifications%20to%20PRC023%20DL/2021-05_PRC-023-6%20Implementation%20Plan_Clean_01102023.pdf

⁶ Standards subject to a future coming into force on the NERC website, retrieved on October 9, 2024 at

<https://www.nerc.com/pa/Stand/Pages/USRelStand.aspx>

⁷ In Decision D-2015-168, the Régie set the effective date of standards as the first day of the calendar quarters following the date of adoption.

⁸ In Decision D-2016-011, the Régie set a minimum of sixty (60) days between the adoption of standards and their effective date.

Given the importance of having standardized practices, with effective mandatory standards harmonized with the United States, the Coordinator proposes that the Reliability Standard come into effect on October 1st, 2026, the same day as the effective date of PRC-023-5.

1.6. Standard to retire

Reliability Standard PRC-023-5 shall be retired as soon as PRC-023-6 takes effect.

1.7. Modifications to the glossary

No changes to the Glossary.

2. ASSESSMENT OF RELEVANCE

The purpose of the proposed Reliability Standard, which remains unchanged from the currently effective version, is to ensure that protective relay settings shall not limit transmission loadability, not interfere with system operators' ability to take remedial action to protect system reliability and be set to reliably detect all fault conditions and protect the electrical network from these faults.

Proposed Reliability Standard PRC-023-6 advances the reliability of the bulk power system by retiring an unnecessary and redundant requirement that has contributed to confusion regarding the proper application of the PRC-023 standard to out-of-step blocking (or power swing blocking) relays. In particular, Reliability Standard PRC-023-6 retires Requirement R2 and makes the standard more focused and clearer. Power swing blocking relays provide increased reliability by preventing relays from tripping for stable power swings. Retiring this requirement allows entities to apply power swing blocking schemes more effectively when appropriate to improve bulk power system reliability.

Reliability Standard PRC-023-6 also revises Attachment A to the standard to remove exclusion 2.3. Research has indicated that these schemes no longer exist and there is no need for a power swing tripping exclusion. NERC asserts that Attachment A, Item 2.3 can be safely retired without creating a reliability gap.

In addition to these revisions, Reliability Standard PRC-023-6 reflects additional minor changes to other elements of the standard to conform to the current NERC Reliability Standard template. These minor modifications include moving the Measure section into the Requirements section.

All the information on NERC's motivations regarding the proposed revisions under the standard can be found in the project documentation 2021-05⁹ or more specifically in the "Technical Rationale"¹⁰.

NERC is of the opinion that the PRC-023-6 standard proposed for adoption is just, reasonable, not unduly discriminatory and is in the public interest. FERC approved the reasons presented by NERC in its Order Letter No. RD23-5-000¹¹.

In addition, the New Brunswick Energy and Utilities Board adopted PRC-023-6 on June 7, 2024 in project no. 577¹², dealing with NERC Project 2021-05. In Ontario, the project was approved by the Ontario Energy Commission¹³.

⁹ NERC project 2021-05 retrieved on October 9, 2024 at

<https://www.nerc.com/pa/Stand/Pages/Project-2021-05-Modifications-to-PRC-023.aspx>

¹⁰ NERC project 2021-05 Technical Rationale, retrieved on October 9, 2024 at

https://www.nerc.com/pa/Stand/202105%20Modifications%20to%20PRC023%20DL/2021-05_Technical%20Rationale_Clean_01102023.pdf

¹¹ FERC Order letter RD23-5-000 retrieved on October 9, 2024 at https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20240124-3062

Considering the information outlined above regarding PRC-023-6, and considering that this standard was developed by recognized organizations in North America, including in Québec and neighboring jurisdictions, in accordance with the 2009 agreement between the Régie, NERC and NPCC with the authorization of the Québec government¹⁴, the Coordinator is of the opinion that Reliability Standard PRC-023-6 contributes to the reliability of the Québec System and harmonization with neighboring systems.

3. PRELIMINARY IMPACT ASSESSMENT

This section provides the Coordinator's preliminary assessment of the impact on all Québec entities.

This project only concerns the retirement of a requirement and an exclusion to enhance clarity and eliminate redundancy within the standard.

In addition, the retirement of Requirement R2 results in no additional costs and is deemed as beneficial should Québec entities choose to use out-of-step blocking elements in the future. For this reason, the Coordinator assesses a low impact for Registered Entities.

The table below shows preliminary assessments of the impact on all Québec entities.

Standard	Impact		
	Implementation	Enforcement	Monitoring
PRC-023-6	Low	Low	Low

Legend:

- Low:** Normal industry practice or standard that only requires minor adjustments to existing processes or practices.
- Moderate:** Change that requires the mobilization of some physical, human or financial resources to implement the proposed standard, enforce it or monitor compliance.
- High:** Change that requires provision and mobilization of significant physical, human or financial resources to plan and implement the proposed standard, enforce it or monitor compliance.

4. FINAL IMPACT ASSESSMENT

This section will be completed upon receipt of the impact assessment forms and at the conclusion of the consultation process prior to filing of the standards with the Régie.

¹² New Brunswick Project no. 577, retrieved on October 9, 2024 at <https://filemaker.nbeub.ca/fmi/webd/NBEUB%20ToolKit13>

¹³ Ontario Energy Board review process, retrieved on October 9, 2024 at <https://www.ieso.ca/en/Sector-Participants/System-Reliability/OEB-Review-Process>

¹⁴ Agreement entered into pursuant to Decree No. 443-2009 issued on April 8, 2009 (in French only) at https://www.regie-energie.qc.ca/fr/participants/dossiers/R-3996-2016/doc/R-3996-2016-B-0106-Audi-Piece-2018_10_26.pdf