
Project QC-2026-05

Correcting unexpected behaviour in Inverter-Based Resources

1. PRESENTATION OF THE STANDARDS

1.1. Applicability

The Reliability Coordinator (hereinafter the “Coordinator”) requests approval of the new Reliability Standard PRC-030-1.

The function covered by the standard proposed for adoption—namely, Reliability Standard PRC-030-1—is shown in the table below.

Standard	Function covered
PRC-030-1	Generator Owner (GO)

1.2. Purpose of the standard

This section outlines the purpose of the standard covered in this request. More specifically, the next point presents the title and purpose of the standard.

- **PRC-030-1 – Unexpected Inverter-Based Resource Event Mitigation.** Identify, analyze and mitigate unexpected Inverter-Based Resource (IBR) change of power output.

1.3. Regulatory context

In accordance with 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”) standard PRC-030-1 of Project 2020-02¹ (Analysis and Mitigation of BES Inverter-Based Resource Performance Issues) of the North American Electric Reliability Corporation (hereinafter “NERC”).

Project 2023-02 is part of the second milestone (Milestone 2: Performance Requirements and Post-Event Performance Validation) of Order 901 of the Federal Energy Regulatory Commission (hereinafter “FERC”).

FERC Order 901, issued on October 19, 2023, includes numerous directives requiring NERC to develop new or revised reliability standards to address the reliability risks associated with IBRs. NERC has developed several standards projects in accordance with these guidelines. Order 901 includes several key milestones that NERC is required to meet. The Coordinator will again refer to FERC Order 901 in future cases.²

Project 2023-02 aims to address the needs outlined in the Standard Authorization Request (SAR³) submitted by the NERC drafting team regarding the performance of IBRs. Within this context, a decision

¹ To learn more about the scope of the NERC Project 2023-02, visit:

[2023-02 Analysis and Mitigation of BES Inverter-Based Resource Performance Issues](https://www.nerc.com/globalassets/standards/rstdp/2023-02-analysis-and-mitigation-of-bes-inverter-based-resource-performance-issues.pdf)

² Reliability Standards under development at NERC related to Order 901, accessed on December 5, 2025, at

https://www.nerc.com/globalassets/standards/rstdp/2025-2027-reliability-standards-development-plan_ferc.pdf

<https://www.nerc.com/pa/Stand/Pages/Standards-Under-Development.aspx>

³ SAR for NERC Project 2023-02, accessed on December 5, 2025, at

https://www.nerc.com/globalassets/standards/projects/2023-02/2023-02_performance_of_ibrs_sar.pdf

was made to create a separate Reliability Standard (PRC-030), which focuses on the detection, analysis and correction of IBR behavioural problems rather than revising the existing PRC-004 standard. Standard PRC-004, for its part, remains dedicated to the detection and correction of incorrect operation of protection systems associated with Elements of the Bulk Electric System (hereinafter the 'BES'). Further details are provided in Section 2 of this document.

The Reliability Standard PRC-030-1 was adopted by the NERC Board of Directors on October 8, 2024, and approved by FERC on February 20, 2025, by Letter Order RD25-3-000⁴.

1.4. Special provisions for Québec

The Coordinator proposes the following specific provisions in the applicability section of the standard:

- To replace all references to the BES with "Main Transmission System (RTP)."
- In Section 4.2.2 of the standard, the criteria applicable to Reliability Standards have been adapted for Québec in accordance with Section 85.3⁵ of the Act to non-RTP IBR facilities.

1.5. Proposed effective date

The NERC Project 2023-02⁶ implementation plan proposes to bring Reliability Standard PRC-030-1 into force on the first day of the first calendar quarter occurring twelve (12) months after the date of approval by the regulatory body. In the United States, Standard PRC-030-1 will come into force on October 1, 2026⁷.

The implementation plan also specifies that the following standard and definitions must be adopted prior to the coming into force of PRC-030-1:

- PRC-029-1 – Frequency and Voltage Ride-through Requirements for Inverter-based Resources
- Ride-through
- Inverter-Based Resources (IBR)

For certain requirements of standard PRC-030-1, the Coordinator proposes the implementation deadlines that are specified in the Québec appendix to the standard. These deadlines are the same as those granted to entities in the United States.

The Coordinator considers that the criteria established by the Régie—namely, that a standard come into force on the first day of a calendar quarter⁸ and that there be a minimum period of sixty (60)⁹ days between the date of adoption and the coming into force of a standard—are being met under the NERC implementation plan.

⁴ FERC Letter Order RD25-3-000, accessed on December 5, 2025, at https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20250220-3027

⁵ Section 85.3 of the *Act respecting the Régie de l'énergie*, accessed on December 5, 2025, at <https://www.legisquebec.gouv.qc.ca/fr/document/lc/R-6.01>

⁶ NERC Implementation Plan for Project 2023-02, accessed on December 5, 2025, at https://www.nerc.com/globalassets/standards/reliability-standards/prc/2023-02_implementation_plan_prc-030-1_unexpected_inverter-based_resource_event_mitigation_clean_final_092324.pdf

⁷ Standards subject to future implementation on the NERC website, accessed on December 5, 2025, at <https://www.nerc.com/pa/Stand/Pages/USRelStand.aspx>

⁸ In its decision [D-2015-168](#) [French only], the Régie sets the coming into force of the standards as the first day of the calendar quarters following the date of adoption.

⁹ In its decision [D-2016-011](#) [French only], the Régie sets at sixty (60) days the minimum period between the date of adoption and the date of coming into force of future standards.

Given the importance of having consistent practices with mandatory standards in force that are consistent with those of the United States, the Coordinator proposes that the regulations take effect on the first day of the first calendar quarter following the adoption by the Régie of the Reliability Standards.

1.6. Standard to be retired

None.

2. ASSESSMENT OF RELEVANCE

Project 2023-02 and the corresponding standard, PRC-030, ensures the identification, analysis and mitigation of IBR behavioural problems. Several NERC disturbance reports, including the Odessa disturbances in Texas, brought forth undesired IBR behaviour problems during system faults.¹⁰ In fact, during certain events, IBRs have unexpectedly and without justification either tripped or temporarily stopped functioning, thereby compromising system reliability.

Reliability Standard PRC-030-1 is a new standard that includes four main requirements. Requirement R1 describes how events are identified as well as exclusions. Requirement R2 mandates the analysis of identified events, specifying in its subsections the exact elements that must be evaluated. Requirement R3 mandates the development of a Corrective Action Plan (CAP) or a technical rationale when corrective actions are deemed necessary. Requirement R4 requires the correction of behavioural problems, through implementation of a CAP.

In accordance with the FERC guidance set out in Order 901, Reliability Standard PRC-030-1 reflects a measured approach to the need for GOs to identify, analyze and mitigate IBR performance issues, while taking into account the implementation burden on entities.¹¹ Reliability Standard PRC-030-1 would also address the need for CAPs to reduce IBR Ride-through behavioural problems that may exacerbate system disturbances.

All information regarding NERC's rationale for this standard can be found in the documentation for Project 2023-02¹² or, more specifically, in the technical rationale¹³ for the standard.

NERC is of the opinion that standard PRC-030-1 is fair and reasonable, not unduly discriminatory, and in the public interest. FERC concurs with the rationale presented by NERC in its Letter Order¹⁴ RD25-3-000.

In addition, the New Brunswick Energy and Utilities Board adopted standard PRC-030-1 on July 17, 2025, under project No. ER-001-2025.¹⁵ In Ontario, the project was adopted by the Ontario Energy Board.¹⁶

¹⁰ NERC Disturbance Reports (Odessa), accessed on December 5, 2025, at https://www.nerc.com/pa/rrm/ea/Documents/Odessa_Disturbance_Report.pdf#search=odessa

¹¹ Petition of the North American Electric Reliability Corporation for Approval of Proposed Reliability Standard PRC-030-1, accessed on December 5, 2025, at https://www.nerc.com/globalassets/who-we-are/legal--regulatory/filings--orders/nerc-filings-to-ferc/2024/petition-for-approval-of-prc-030-standard_signed.pdf

¹² NERC Project 2021-04, accessed on December 5, 2025, at <https://www.nerc.com/pa/Stand/Pages/Project-2021-04-Modifications-to-PRC-002-2.aspx>

¹³ Technical rationale for Standard PRC-030-1 of NERC Project 2023-02, accessed on December 5, 2025, at https://www.nerc.com/pa/Stand/Project202104ModificationstoPRC0022DL/2021-04%20PRC-002-5%20Technical%20Rationale_Clean_FB_091224.pdf

¹⁴ FERC Letter Order RD25-3-000, accessed on December 5, 2025, at https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20250220-3027.

¹⁵ Matter No. ER-001-2025 in New Brunswick, accessed on December 5, 2025: <https://filemaker.nbeub.ca/fmi/webd/NBEUB%20Toolkit13>

¹⁶ Ontario Energy Board Review Process, accessed on December 5, 2025, at <https://www.ieso.ca/en/Sector-Participants/System-Reliability/OEB-Review-Process>

In light of the above considerations regarding Standard PRC-030-1, and given that this standard was developed by organizations recognized in North America, including Québec and neighbouring jurisdictions, in accordance with the agreement reached in 2009 between the Régie, NERC and the NPCC, with the authorization of the Government of Québec¹⁷, the Coordinator is of the opinion that standard PRC-030-1 contributes to the reliability of the System in Québec and to alignment with neighbouring Systems.

3. PRELIMINARY IMPACT ASSESSMENT

This section presents the preliminary assessment of the impact on all entities in Québec, as reported by the Coordinator.

The new standard PRC-030-1 requires that IBR GOs analyze the performance issues identified in their facilities, which may require certain engineering and analytical skills, as well as increased coordination with equipment manufacturers to identify possible corrective actions. This type of activity is already performed by all entities in the transmission system and, more commonly, by synchronous resource GOs (as required by PRC-004). Additional equipment and monitoring capabilities may be required at GO IBR facilities to determine the root causes of deviations. As noted in the Project 2023-02 SAR, given the systemic nature of the risks posed by these issues, the benefits in terms of reliability are expected to outweigh the costs associated with this effort. In such a case, the adoption of PRC-030-1 in Québec would have a moderate impact on the entities subject to the standard.

The following table presents preliminary estimates of the impacts on all entities in Québec.

Standard	Impact		
	Implementation	Maintenance	Follow-up
PRC-030-1	Moderate	Low	Low

Legend

Low: Normal industry practice or standard requiring only minor adjustments to existing processes or practices.

Moderate: A change that requires certain physical, human or financial resources to implement, maintain or monitor compliance with the proposed standard.

High: A change that requires significant physical, human or financial resources to plan, implement, maintain or monitor compliance with the proposed standard.

4. FINAL IMPACT ASSESSMENT

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

¹⁷ Agreement concluded in accordance with Decree No. 443-2009, published on April 8, 2009, 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