Summary of Proposed Reliability Standards: PRC-029-1 and PRC-024-4

Proposed Reliability Standards PRC-029-1 and PRC-024-4 addressing generator Ride-through requirements

Details of Standard(s) Development

Reliability Standards Authority:	NERC
Standard(s)	 PRC-029-1 – Frequency and Voltage Ride-through Requirements for Inverter-Based Generating Resource PRC-024-4 – Frequency and Voltage Protection Settings for Synchronous Generators and Synchronous Condensers
Purpose	PRC-029-1: To ensure that IBRs Ride-through to support the Bulk Power System (BPS) during and after defined frequency and voltage excursions.PRC-024-4: To assure that protection of synchronous generators and synchronous condensers do not cause tripping during defined frequency and voltage excursions in support of the Bulk Power System (BPS).
Change Type:	FERC DIRECTIVE
Affected Functional Entities:	Generator Owner (GO)Transmission Owner (TO)
Ballot Results:	 PRC-029-1 89.51% Quorum / 77.88% Approval PRC-024-4 90.77% Quorum / 86.41% Approval



Ontario Participant Support:	 PRC-029-1: There were 271 votes cast by NERC registered entities. 3 OEB rate-regulated entities voted (3/267). One Affirmative, One Negative and One Abstain votes. PRC-024-4: There were 271 votes cast by NERC registered entities. 3 OEB rate-regulated entities voted (3/271). Two were Affirmative and one was Abstain.

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Date	Action
October 08, 2024 •	Adopted by NERC Board of Trustees
November 04, 2024 •	NERC Petition for Approval
November 12, 2024 •	IESO Posting Date
March 11, 2025 •	End of OEB Review Period
TBD •	FERC Order Issued
TBD •	US Mandatory Enforcement Date
TBD •	Ontario Enforcement Date (Milestones in Reliability Standard Development and Lifecycle)

Standard Development Milestones

Summary

Proposed Reliability Standard PRC-029-1 would address the important reliability issue of IBR Ride-through performance through capability and performance-based requirements for IBRs. Consistent with the relevant FERC directives in Order No. 901, proposed PRC-029-1 would advance reliability by: (1) establishing a clear understanding of what it means for a generator to Ride-through a disturbance; (2) establishing voltage and frequency Ride-through criteria for IBRs to prevent the unnecessary tripping and momentary cessation of current due to phase lock loop loss of synchronism; and (3) ensuring that post-disturbance ramp rates return to pre-disturbance levels.

Standard PRC-024-4 would revise the applicable facility types to exclude IBRs and to include type 1 and type 2 wind resources and synchronous condensers. NERC determined there is no reliability need to impose actual disturbance Ride-through requirements on these resources, and that restrictions for frequency and voltage protection setting ranges would continue to be appropriate. Together the proposed Reliability Standards would help ensure that applicable BPS connected resources would Ride-through system disturbances and avoid the negative reliability impacts associated with unnecessary tripping and momentary cessation.

Other Salient Information

Stakeholder Consultation

NERC Reliability Standards Development Procedure

- NERC develops Reliability Standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC Standard Processes Manual;
- NERC's rules provide for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing Reliability Standards;
- The development process is open to any person or entity with a legitimate interest in the reliability of the Bulk Power System. NERC considers the comments of all stakeholders;
- Stakeholders must approve, and the NERC Board of Trustees must adopt, a new or revised Reliability Standard before NERC submits the Reliability Standard to FERC for approval;
- NERC provided public notices for comments and balloting as follows:
 - Standard Authorization Request approval:

January 19, 2022

- First Posting:August 1 September 14, 2023,
- Waivers of Standard Processes Manual minimum posting length requirements:

- Second Posting: March 18 April 11, 2024
 Third Posting: May 31 June 17, 2024
 Forth Posting July 22 August 12, 2024
- Final Ballot September 12 18, 2024

IESO Reliability Standards Standing Committee

- The purpose of the Reliability Standards Standing Committee (RSSC) is to assist market participants to develop a more comprehensive understanding of their reliability obligations by:
 - Notifying participants of reliability-related information on new and developing reliability standards;
 - Providing a forum to discuss and develop consensus comments on new and developing reliability standards; and
 - Engaging participants in the standard development process of NERC and NPCC.
- The majority of stakeholder engagement takes place by email communications and is open to any stakeholder wishing to join
- The IESO presented the proposed changes at the following RSSC meetings:
 - August 25, 2022
 - December 12, 2022
 - September 14, 2023

- March 14, 2023
 June 13, 2024
 September 12, 2024