

Summary of Proposed Reliability Standard: MOD-033-3

Proposed Reliability Standard MOD-033-3 — Steady-State and Dynamic System Model Validation

Details of Standard(s) Development

Reliability Standards Authority: NERC

Standard(s)	MOD-033-3 — Steady-State and Dynamic System Model Validation
Purpose	To establish a comprehensive process for system model validation to facilitate achieving and maintaining adequate model accuracy.
Change Type:	FERC DIRECTIVE
Affected Functional Entities:	- Planning Coordinator (PC) - Reliability Coordinator (RC) - Transmission Operator (TOP)
Ballot Results:	The drafting team posted the final documents but did not conduct a final ballot under Standard Processes Manual (SPM) Section 4.13. This provision allowed them to conclude the standards action without a final ballot because: the previous ballot achieved at least 85% weighted segment approval, the team made a good faith effort to resolve objections, the team responded in writing to comments as required by Section 4.12, no further changes were proposed to the balloted documents.
Ontario Participant Support on last ballot:	There were 255 votes cast by NERC registered entities. 1 OEB rate-regulated entities voted (1/255) Abstain.
Impact Within Ontario	Not Assessed.

Standards Development Milestones¹

Date	Action
October 31, 2025	• Adopted by NERC Board of Trustees
November 4, 2025	• NERC Petition for Approval
November 11, 2025	• IESO Posting Date
March 11, 2026	• End of OEB Review Period

Summary

Accurate system models are critical for Bulk-Power System reliability. Overly optimistic models risk under-investment and outages, while overly pessimistic models lead to inefficient operations. With the growing share of Inverter-Based Resources (IBRs) and Distributed Energy Resources (DERs), traditional modeling has shown deficiencies, creating reliability risks highlighted by recent events.

FERC Order No. 901 (2023) directed NERC to develop standards addressing IBR performance, operations, and planning. Proposed Reliability Standard MOD-033-3 advanced Bulk-Power System reliability by ensuring IBRs and DERs were included in system models and by establishing a periodic process to compare both steady-state and dynamic models against actual system behavior. This reduced discrepancies between simulated and actual performance, improving accuracy for planning and operations. The standard addressed Order No. 901 directives by requiring validation of registered IBRs, unregistered IBRs, and aggregated DERs that materially impact the BPS.

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;

¹ The next steps will be the issuance of the FERC Order followed by determination of the [Ontario Enforcement Date](#).

- NERC provided public notices for comments and balloting as follows:
 - Project Initiation: January 17, 2024
 - Standards Committee Authorizes Procedural Waiver: April 16, 2025
 - First Posting – Comment Period, Additional Ballot, and Initial Ballot: April 17, 2025 through May 21, 2025
 - Second Posting – Comment Period, Additional Ballot, and Initial Ballot: August 8, 2025 – September 10, 2025

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:
 - December 11, 2024
 - March 19, 2025
 - June 4, 2025