NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Implementation Plan

Project 2021-01 System Model Validation with IBRs
Reliability Standard MOD-033-3

Applicable Standard

- MOD-033-3 – Steady-State and Dynamic System Model Validation

Requested Retirement

- MOD-033-2 – Steady-State and Dynamic System Model Validation

Prerequisite Definitions

The following definitions, developed under other projects, must be approved before the Applicable Standard becomes effective:

- Model Validation (developed under Project 2020-06)
- Distributed Energy Resource (developed under Project 2022-02)

Applicable Entities

- Planning Coordinator
- Reliability Coordinator
- Transmission Operator

Background

In October 2023, the Federal Energy Regulatory Commission (FERC) issued Order No. 901,[1] The Order addresses a wide spectrum of reliability risks to the grid from the application of Inverter-Based Resources (IBRs), including both utility scale and behind-the-meter or Distributed Energy Resources (DERs), and directed NERC to address those risks. Specifically, FERC directed NERC to develop new or modified Reliability Standards, including new requirements for disturbance monitoring, data sharing, post-event performance validation, and correction of IBR performance. In January 2024, NERC submitted a filing to FERC outlining a comprehensive work plan[2] to address the directives within Order No. 901. Within the work plan, NERC identified milestones that must be accomplished. Milestone 3 has three projects that address issues identified in NERC assessments regarding modeling. The projects include 2020-06 Verifications of Models and Data for Generators,[3] 2022-02 Uniform Modeling

[1] *Reliability Standards to Address Inverter-Based Resources*, Order No.901, 185 FERC ¶ 61,042 (2023); https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20231019-3157&optimized=false

[2] See *Informational Filing of the N. Am. Elec. Reliability Corp. Regarding the Development of Reliability Standards Responsive to Order No. 901*, Docket No. RM22-12-000 (January 18, 2024).

[3] https://www.nerc.com/pa/Stand/Pages/Project-2020_06-Verifications-of-Models-and-Data-for-Generators.aspx

Framework for IBR,[4] and 2021-01 System Model Validation with IBRs.[5] All Milestone 3 projects must be filed with FERC by November 4, 2025, with full implementation by January 1, 2030, to comply with Order No. 901.

Project 2021-01 addresses Model Validation of both steady-state and dynamic system models (including registered IBRs, unregistered IBRs — as described in the standard as IBRs that are not DERs and that do not meet the criteria that would require the owner(s) to register with NERC for mandatory Reliability Standards compliance purposes — and aggregate DERs) against actual system behavior.

General Considerations

Proposed Reliability Standard MOD-033-3 was developed to address FERC Order No. 901 directives. The modifications to MOD-033 address System Model Validation and complement the work proposed by Project 2020-06 Verifications of Models and Data for Generators and Project 2022-02 Uniform Modeling Framework for IBR.

The proposed revisions in MOD-033-3 are intended to improve the clarity of the requirements and are not substantive in nature; i.e., they do not change the scope of the requirements, nor do they reset the 24-month clock in Requirement R1, Parts 1.1 and 1.2 for activity under the prior version of the MOD-033 standard. While MOD-033-3 is not dependent on the proposed revisions to Reliability Standards in the other two Milestone 3 projects, it is dependent on the proposed Glossary terms “Model Validation” and “Distributed Energy Resource”.

This implementation plan is not intended to affect the timelines provided in the implementation plans for the other Milestone 3 Reliability Standards addressing the provision of unregistered IBR data or aggregate DER data.

Effective Date

Where approval by an applicable governmental authority is required, Reliability Standard MOD-033-3 shall become effective on the later of: (1) the first day of the first calendar quarter after the effective date of the applicable governmental authority’s order approving the standard; (2) the first day of the first calendar quarter after the effective date of the applicable governmental authority’s order approving the proposed definition of Model Validation; or (3) the first day of the first calendar quarter after the effective date of the applicable governmental authority’s order approving the proposed definition of Distributed Energy Resource, or as otherwise provided for by the applicable governmental authority.

Where approval by an applicable governmental authority is not required, the standard shall become effective on the later of: (1) the first day of the first calendar quarter after the date the standard is adopted by the NERC Board of Trustees; (2) the first day of the first calendar quarter after the date the proposed definition of Model Validation is adopted by the NERC Board of Trustees; or (3) the first day of

[4] https://www.nerc.com/pa/Stand/Pages/Project2022-02ModificationstoTPL-001-5-1andMOD-032-1.aspx
[5] https://www.nerc.com/pa/Stand/Pages/Project_2021-01_Modifications_to_MOD-025_and_PRC-019.aspx

the first calendar quarter after the proposed definition of Distributed Energy Resource is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

Retirement Date

Reliability Standard MOD-033-2 shall be retired immediately prior to the effective date of Reliability Standard MOD-033-3 in the particular jurisdiction in which the revised standard is becoming effective.