NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Implementation Plan

Project 2020-06 Verifications of Models and Data for Generators
Reliability Standard MOD-026-2

Applicable Standard(s)

- Reliability Standard MOD-026-2 Verification and Validation of Dynamic Models and Data

Requested Retirement(s)

- Reliability Standard MOD-027-1 Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions
- Reliability Standard MOD-026-1 Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions

Prerequisite Standard(s)

These standard(s) or definitions must be approved before the Applicable Standard becomes effective:

- ~~MOD-032-2 Data for Power System Modeling and Analysis~~ None

Applicable Entities

- Generator Owner
- Transmission Owner
- Planning Coordinator
- ~~Transmission Operator~~
- Transmission Planner

Background

The NERC Inverter-Based Resource (IBR) Performance Task Force (IRPTF) undertook an effort to perform a comprehensive review of all NERC Reliability Standards to determine if there were any potential gaps or areas of improvement. The IRPTF identified several issues as part of this effort and documented its findings and recommendations in the "IRPTF Review of NERC Reliability Standards White Paper," which was approved in March 2020 by the Operating Committee and the Planning Committee (now part of the Reliability and Security Technical Committee (RSTC)). Among the findings noted in the white paper, the IRPTF identified issues with MOD-026-1 and MOD-027-1 and recommended that they should either be revised or a new model verification standard should be developed for Inverter-Based ~~resources~~Resources (IBRs) since these standards stipulate verification methods and practices which do not provide model verification for the majority of the parameters within an Inverter-Based Resource.

In October 2023, FERC issued Order No. 901,[1] which directs the development of new or modified ~~reliability standards~~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. Revisions to MOD-026 are part of Milestone 3, which has three projects that address issues identified in NERC assessments regarding modeling. These projects include 2020-06 Verifications of Models and Data for Generators,[3] 2022-02 Uniform Modeling 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.

General Considerations

In developing this implementation plan, the drafting team (DT) considered the timeline in MOD-026-2 necessary to allow the Transmission Planner and Planning Coordinator to develop the processes for data sharing, post-event performance validation, and correction. Under Requirement R1, a jointly developed Model Verification process is required between the Planning Coordinator and the Transmission Planner. Therefore, Requirement R1 will be phased in over twelve (12) months after the effective date for MOD-026-2 to allow sufficient time to develop the process.

~~The DT recognizes that MOD-032-2 must be implemented before MOD-026-2 because MOD-032-2 Requirement R1 specifies the types of data and information that will be used in the Model Verifcation process of MOD-026-2. While the current MOD-032-1 standard already specifies the types of data needed, MOD-026-2 Requirement R1 Part 1.1 now explicitly references data collected under MOD-032 to support Model Verification.~~

The DT has added language in Requirement R3 around Generator Owners and Transmission Owners to document in a declaration to its Transmission Planner that an EMT model is precluded for three reasons. The reasons stressed were comments that industry has greatly expressed about legacy facilities and lack of Original Equipment Manufactures being present.

An additional consideration the team noted is the requirement for all directives issued in FERC Order No. 901 to be fully implemented by January 1, 2030, including those covered by these standard revisions. After the twelve (12) month implementation period for Requirement R1, Requirements R2, R3, R4, R5, ~~and~~ R6 and R7 will have a twenty-four (24) month period after Requirement R1's phased in compliance period to ensure all the requirements satisfying the directives are completely effective before the 2030 deadline set by FERC Order No. 901.

[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
[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

Effective Date and Phased-In Compliance Dates

The effective dates for the proposed Reliability Standard are provided below. Where the DT identified the need for a longer implementation period for compliance with a particular section of the proposed Reliability Standard (i.e., an entire Requirement or a portion thereof), the additional time for compliance with that section is specified below. The phased-in compliance date for those particular sections represents the date that entities must begin to comply with that particular section of the Reliability Standard, even where the Reliability Standard goes into effect at an earlier date.

Standard – MOD-026-2

Where approval by an applicable governmental authority is required, the standard shall become effective on the first day of the first calendar quarter ~~that is twelve (12) months~~ after the effective date of the applicable governmental authority's order approving the standard, 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 first day of the first calendar quarter ~~that is twelve (12) months~~ after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

Compliance Date for MOD-026-2 - Requirement R1

Entities shall not be required to comply with Requirement R1 relating to the jointly developed ~~Model Verification process~~dynamic model requirements between the Planning Coordinator and Transmission Planner until the ~~later~~earlier of: ~~1~~(i) twelve (12) months after the effective date of the Reliability Standard MOD-026-2; or ~~2~~(ii) twelve (12) months after the effective date of MOD-032-2.

Compliance Date for MOD-026-2 - Requirements R2, R3, R4, R5, ~~and~~ R6, and R7

Entities shall not be required to comply with Requirements R2, R3, R4, R5, ~~and~~ R6, and R7 until the ~~later~~earlier of: ~~1) twenty-four (24~~(i) thirty-six (36) months after the effective date of Reliability Standard MOD-026-2; or ~~2) twenty-four (24~~(ii) thirty-six (36) months after the effective date of MOD-032-2.

Retirement Date

Reliability Standard MOD-026-1

Reliability Standard MOD-026-1 shall be retired immediately prior to the effective date of MOD-026-2 in the particular jurisdiction in which the revised standard is becoming effective.

Reliability Standard MOD-027-1

Reliability Standard MOD-027-1 shall be retired immediately prior to the effective date of MOD-026-2 in the particular jurisdiction in which the revised standard is becoming effective.

Initial Performance Dates

Applicable entities shall initially comply with the periodic requirements (Requirement R2) of MOD-026-2 within ten (10) calendar years of the most recent transmittal, based upon the periodic timeframes of their last performance under the respective requirements in the Requested Retired Standards (MOD-026-1 Requirement R2 or MOD-027-1 Requirement R2). Applicable entities shall initially comply with MOD-026-2 Requirement R3 by the periodic timeframe associated with the performance of MOD- 026-2 Requirement R2. When the periodic timeframe falls between the effective date of MOD-026-2 and the Compliance Date for the respective requirement, the applicable entity shall comply with the Requirement(s) of MOD-026-2 by the Compliance Date. ~~The~~
For applicable ~~entities~~facilities commissioned after the effective date of MOD-026-2, entities shall comply with the periodic requirements of MOD-026-2 by the later of: (i) the Compliance Date for the respective Requirement; or (ii) 365 calendar days after the commissioning date in accordance with MOD-026-2 Attachment 2.

If a Generator Owner or Transmission Owner submits a verified model under MOD-026-2 Requirements R2 and R3 prior to the effective date of MOD-026-2 (i.e., early compliance with Requirements R2 and R3), the Transmission Planner will not be obligated to review the EMT model until the later of: (i) 90 days after the effective date of MOD-026-2 Requirement R1; or (ii) 120 days after receiving the submitted model.