

FERC Order No. 901 Summary of Milestone 3

NERC Standards Development Update

October 2024

Overview

As identified in NERC's assessments and recommendations, additional model types must be used for local reliability studies, during the interconnection process and following commissioning to validate as-built performance, as well as through ongoing validation of performance for assuring quality models. The deficiencies within the current state of model quality are well documented and comprise the scope of issues to be addressed in this Milestone. To facilitate the development of this Milestone, Standard Authorization Requests were assigned to active projects that already had some aspects of Order No. 901-directed modeling improvements and drafting team familiarity with the Reliability Standards to be changed.

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.

Milestone 3 Key Messages

- NERC's assessments have found that additional model types must be used for local reliability studies during the interconnection process, following commissioning to validate as-built performance, and through ongoing validation of performance for assuring quality models.
- Milestone 3 projects address the scope of issues related to the current state of model quality.
- Industry is encouraged to engage with these drafting teams early in 2025 to assure a timely filing.
- Not all projects address Order No. 901 directives directly but must be included in Milestone 3 as a single solution to assure a consistent approach to how modeling validation and data sharing is conducted.
- The teams will continue to collaborate and will provide summary updates as those are available.

Milestone 3 Status

- The teams are collaborating on further defining their work scopes in preparation for 2025 development work.
- A Milestone 3 workshop will be held on January 15–16, 2025. Modeling subject matter experts are encouraged to participate and contribute to the workshop and resulting next steps. Registration details will be provided soon.

Milestone 3 Projects

Project 2020-06 – Verifications of Models and Data for Generators

Standards Include: MOD-026, MOD-027, FAC-002

Standards Developer: [Josh Blume](#)

This project addresses the verification and validation of models for registered inverter-based resources (IBR), unregistered and aggregated IBR, and aggregated distributed energy resources.

Additional focus will be to define terms (such as model verification and model validation), develop a process for post-interconnection model validation based on performance data, and set validation expectations using performance data.

Project 2021-01 – System Model Validation with IBRs

Standards Include: MOD-033

Standards Developer: [Al McMeekin](#)

This project addresses system-level model verification and validation against actual behavior during disturbances, as well as aligning steady state and dynamic representation, where appropriate.

Additional focus will be to develop criteria for performing validation, determine minimum study conditions for conducting validation studies, and develop a process to communicate system interconnection-wide model defects to Transmission Planners and other associated entities.

Project 2022-02 – Uniform Framework Model Framework for IBR

Standards Include: MOD-032, TOP-003, IRO-010

Standards Developer: [Laura Anderson](#)

This project addresses developing a model library for IBR that NERC will maintain. The library will consist of generic IBR model types.

Additional focus will be to establish a uniform framework for data sharing and model development. Other standards will utilize performance data and the library using this framework.

Project 2022-04 – Electromagnetic Transient (EMT) Modeling (anticipated to be added to Milestone 3 in December 2024)

Standards Include: MOD-032, FAC-001, FAC-002

Standards Developer: [Jessica Harris](#)

This project addresses establishing EMT studies for IBR as appropriate during the interconnection process.

Additional focus will be to assure alignment with other modeling requirements developed by Milestone 3 project teams to ensure a streamlined process for model validation and data sharing.