NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

NERC Update

Rich Bauer
NERC Reliability Assessment and Performance Analysis
WECC PCS
March 6, 2025

RELIABILITY | ACCOUNTABILITY




FERC Order 901

1 COMPLETED JANUARY 202[illegible]

Order No. 901 Work Plan submis[illegible]

Completed

2 DUE NOVEMBER 4, 202[illegible]

Standards development and filing to address performance requirements and post-performance validations for Registered IBRs

Completed

3 DUE NOVEMBER 4, 2025

Development and filing of Reliability Standards to address data sharing and model validation for all IBRs

4 DUE NOVEMBER 4, 2026

Development and filing of Reliability Standards to address use of performance data in Operational and Planning studies

Milestone 2

Filed with FERC 11/4/2024

New PRC-028

Disturbance Monitoring and Reporting Requirements for Inverter-Based Resources

New PRC-029

Frequency and Voltage Ride-through Requirements for Inverter-based Resources

New PRC-030

Unexpected Inverter-Based Resource Event Mitigation

New Standards

189 FERC ¶ 61,212
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

18 CFR Part 40

[Docket No. RM25-3-000]

Reliability Standards for Frequency and Voltage Protection Settings and Ride-Through for Inverter-Based Resources

(Issued December 19, 2024)

AGENCY: Federal Energy Regulatory Commission.

ACTION: Notice of proposed rulemaking.

SUMMARY: The Federal Energy Regulatory Commission (Commission) proposes to approve proposed Reliability Standards PRC-024-4 (Frequency and Voltage Protection Settings for Synchronous Generators, Type 1 and Type 2 Wind Resources, and Synchronous Condensers) and PRC-029-1 (Frequency and Voltage Ride-through Requirements for Inverter-Based Resources), which the North American Electric Reliability Corporation submitted in response to Commission directives. The Commission seeks comments on all aspects of the proposed approval.

FERC PRC-029 NOPR

FERC Order 901

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Milestone 3

FERC Order 901 Milestone 3 Projects

Project 2020-06 – Verifications of Models and Data for Generators: *Addressing the verification and validation of models for registered inverter-based resources (IBR), unregistered and aggregated IBR, and aggregated distributed energy resources.*

Additional Focus:

- Define terms, such as Model Verification and Model Validation
- Develop process for post-interconnection model validation based on performance data
- Set validation expectations using performance data

Standards Include: MOD-026, MOD-027, FAC-00

Project 2021-01 – System Model Validation with IBRs: *Addressing system-level model verification and validation against actual system operational behavior during disturbances as well as aligning steady state and dynamic representation, where appropriate.*

Additional Focus:

- Develop criteria for performing validation
- Determine minimum study conditions for conducting validation studies
- Develop process to communicate system interconnection-wide model defects to Transmission Planners and other associated entities

Standards Include: MOD-033

Project 2022-02 – Uniform Framework Model Framework for IBR: *Addressing development of a NERC-maintained library consisting of generic IBR model types.*

Additional Focus:

- Establish a uniform framework for data sharing and model development
- Ensure other standards use performance data and library using this framework

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

Project 2022-04 – Electromagnetic Transient (EMT) Modeling, which addresses the establishment of EMT studies, as appropriate, during the interconnection process, is not a Milestone 3 project, but is being developed concurrently and may have a later filing date.

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

FERC Order 901 Milestone 3 Projects

Project 2020-06 – Verifications of Models and Data for Generators: *Addressing the verification and validation of models for registered inverter-based resources (IBR), unregistered and aggregated IBR, and aggregated distributed energy resources.*

Additional Focus:

- Define terms, such as Model Verification and Model Validation
- Develop process for post-interconnection model validation based on performance data
- Set validation expectations using performance data

Standards Include: MOD-026, MOD-027, FAC-00

Milestone 3

Project 2021-01 – System Model Validation with IBRs:
Addressing system-level model verification and validation against actual system operational behavior during disturbances as well as aligning steady state and dynamic representation, where appropriate.

Additional Focus:

- Develop criteria for performing validation
- Determine minimum study conditions for conducting validation studies
- Develop process to communicate system interconnection-wide model defects to Transmission Planners and other associated entities

Standards Include: MOD-033

Milestone 3

Project 2022-02 – Uniform Framework Model Framework for IBR: *Addressing development of a NERC-maintained library consisting of generic IBR model types.*

Additional Focus:

- Establish a uniform framework for data sharing and model development
- Ensure other standards use performance data and library using this framework

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

Milestone 3

Project 2022-04 – Electromagnetic Transient (EMT) Modeling being developed concurrently and may have a later filing date.

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

Milestone 3

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Save the Date for Industry Engagement Work-shop

Reliable IBR Integration and Milestone 3 of FERC Order No. 901

Day 1 | IBR Integration, NERC Engineering
January 15, 2025 | 8:30 a.m. - 4:30 p.m. Mountain

Day 2 | Milestone 3, NERC Standards
January 16, 2025 | 8:30 a.m. - 4:30 p.m. Mountain

In-Person Attendance:
Location: Phoenix, Arizona - Hotel to be Announced

Virtual Attendance: Webinar Registration

Data Center Load Loss

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Announcement

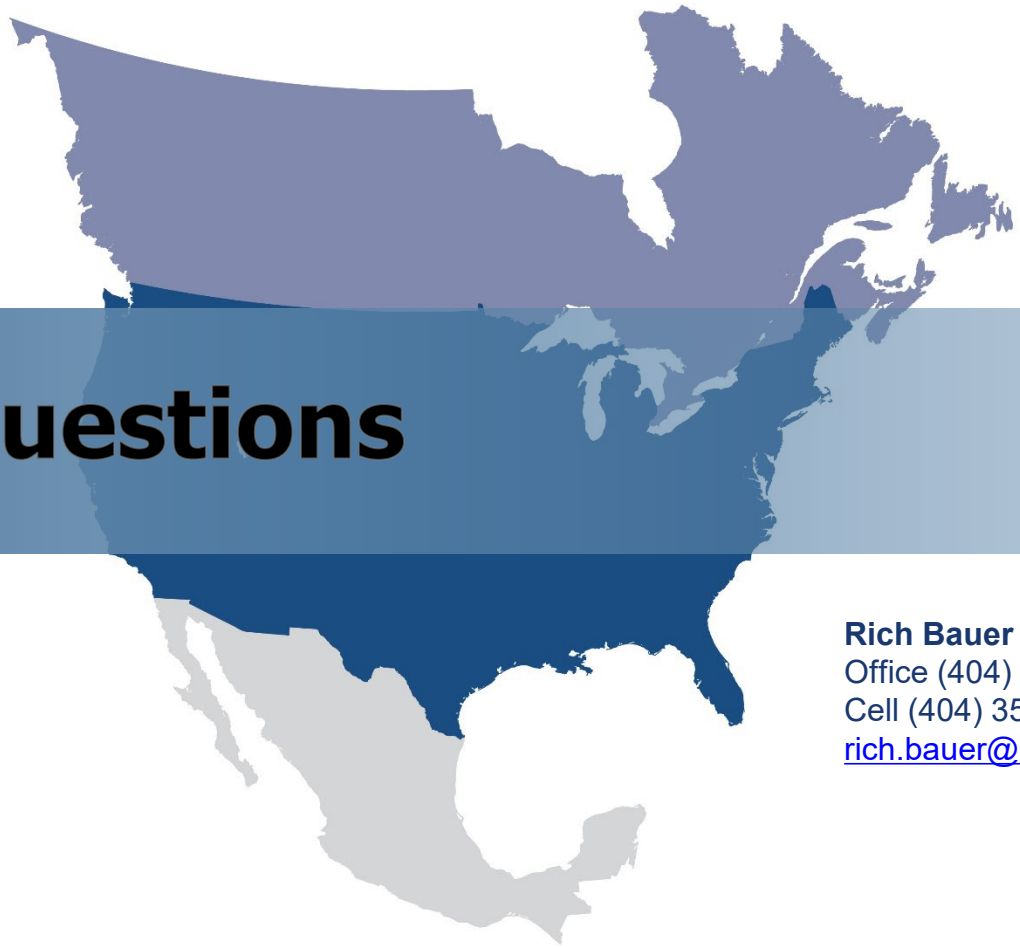
NERC Publishes Incident Review and Guidance on Voltage-Sensitive Large Load Integration

Click here: **Incident Review: Considering Simultaneous Voltage-Sensitive Load Reductions**

ATLANTA – NERC has published a new incident review examining the risks and challenges posed by the increasing integration of voltage-sensitive large loads, such as data centers and cryptocurrency mining facilities, into the Bulk Electric System (BES). This review highlights the potential for significant load loss during normally cleared faults on the BES and emphasizes the growing presence of voltage-sensitive loads within the system.

The review analyzes a recent event in the Eastern Interconnection that underscores the vulnerability of these loads to voltage disturbances, which could have significant reliability implications. The future considerations from the incident analysis provide critical guidance for BES operators, planners, and regulators. Specifically, it calls for enhanced awareness and proactive measures to identify and mitigate the potential reliability risks associated with large voltage-sensitive load losses. These considerations are essential for ensuring the continued stability and reliability of the BES as the integration of such loads expands.

For more information or assistance, please contact NERC Communications.



Questions

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