

NERC Industry Engagement Workshop – Reliable IBR Integration and Milestone 3 of FERC Order 901 Agenda

January 15, 2025 | 8:30 – 4:30 p.m. Mountain
January 16, 2025 | 8:30 – 4:30 p.m. Mountain

Location: Phoenix, Arizona
Renaissance Inn Downtown
100 N 1st St, Phoenix, AZ, 85004

[Webinar Registration](#)

Day 1 – January 15, 2025

Technical Presentation: Opening Remarks

Opening Remarks by Jim Robb, President & CEO, NERC

Technical Presentation: Evolution of Grid Characteristics with Changing Resource Mix

NERC staff will provide a comprehensive overview of their work, focusing on the evolving characteristics of the electrical grid. They will discuss how various grid characteristics are evolving with changing resource mix and demand patterns and their nature. In addition, the staff will introduce their review of the sufficiency of existing essential reliability services, addressing both current capabilities and future needs to ensure a stable and resilient grid. This presentation aims to highlight the challenges and opportunities associated with understanding these changes from first principles and to emphasize the importance of maintaining reliability in an increasingly complex energy landscape.

Panel Discussion: Grid Stability Challenges and Services from Inverter-Based Resources (IBRs)

Experts from diverse stakeholder organizations will engage in a comprehensive discussion about the challenges associated with maintaining grid stability in the face of rising penetration of IBR. They will explore the technical difficulties posed by these renewable energy sources, particularly as they become a more significant part of the energy mix. Additionally, the conversation will encompass the services that advanced IBR can provide, such as frequency support, voltage regulation, and reactive power compensation, which can help enhance grid reliability.

Furthermore, the group will address the crucial aspects of monitoring system inertia and strength, examining available methodologies and technologies that industry can leverage to ensure that the grid remains resilient and capable of responding to fluctuations in supply and demand. Overall, the discussion

aims to identify effective strategies for integrating IBR into the existing grid infrastructure while maintaining stability and reliability.

Panel Discussion: Best Practices on IBR Modeling and Validation

Experts from original equipment manufacturers (OEMs) and engineering consulting firms will engage in an in-depth discussion on various aspects of the modeling of individual inverter-based resource unit and plant controllers. They will cover the validation process for inverter unit models, ensuring that these models accurately reflect real-world performance and reliability.

The discussion will include insights into model quality verification and attestations, highlighting the standards and processes used to verify and document the quality of the models such as their accuracy, usability and efficiency. Lastly, they will discuss the management of these models, encompassing both challenges and best practices for maintaining and updating throughout the IBR plant lifecycle.

Panel Discussion: IBR Modeling Challenges

The session will review how Generator Owners (Gos), developers and their consultants develop IBR plant models by assembling models from inverter and plant controller OEMs for interconnection and planning studies. Representatives from Gos, developers, and consulting firms will participate in an in-depth discussion about the various modeling challenges encountered during the interconnection process. They will explore the entire model lifecycle, addressing key phases such as initial development, validation, interconnection studies, model true-up during commissioning and ongoing maintenance. The conversation will also examine how these challenges can impact interconnection project schedules, model accuracy and thus, effectiveness of interconnection studies, providing insights into best practices and potential solutions for stakeholders involved in this crucial aspect of project development.

Closing Remarks and Adjournment

Day 2 - January 16, 2025

Presentation: FERC Order No. 901 History and Objectives

NERC staff will discuss a thorough examination of what FERC Order No. 901 Milestone 3 is addressing, including the history of events, topics of the milestone, and milestone objectives.

Presentation: Day 1 Recap

NERC staff will provide a comprehensive overview of the topics covered during Day 1 of the conference. This recap will include key discussions and insights shared by participants. Additionally, NERC will present its perspective on various aspects of modeling practices within the industry, addressing the challenges that professionals face in this area. The presentation will also review dynamic modeling recommendations that NERC believes will enhance modeling practices and thus accuracy and efficacy of modeling studies.

Panel Discussion: IBR Modeling Requirements and Importance of Model Verification.

Representatives from Transmission Planning (TP) and Planning Coordinators (PCs) will discuss modeling requirements, model verification practices, and the challenges of model quality and accuracy in interconnection and local reliability studies.

Panel Discussion: Interconnection-Wide Cases – Model Fidelity and Use Cases

Representatives from PCs and MOD-032 will engage in a comprehensive discussion on various aspects of modeling practices. The speakers will also address specific use cases related to building and maintaining interconnection-wide cases, illustrating their practical applications and purpose of these modeling efforts in the broader context of system planning and information sharing among neighboring PCs. The discussion will also include model fidelity, and quality needs specific to interconnection-wide cases.

Panels Recap

The staff at NERC will summarize the key points that were discussed during the previous panels and highlight differing model fidelity and quality needs for various use cases. This summary will explore how these discussions relate to the standard projects outlined in Milestone 3, highlighting specific themes, challenges, and insights that emerged. By connecting these discussions to Milestone 3, NERC aims to clarify the implications for the ongoing projects and ensure that the lessons learned are effectively integrated into future initiatives.

Presentations: Milestone 3 Updates by Drafting Teams

The NERC Drafting Teams working on Milestone 3 projects will present the background of each project, outline their main objectives, provide updates, and discuss the next steps. Following these presentations, the Drafting Teams will hold breakout sessions where attendees can engage in open discussions about the projects and how the industry can participate in development of solutions.

Closing Remarks and Adjournment