

Standard Authorization Request (SAR)

Complete and submit this form, with attachment(s) to the [NERC Help Desk](#). Upon entering the Captcha, please type in your contact information, and attach the SAR to your ticket. Once submitted, you will receive a confirmation number which you can use to track your request.

The North American Electric Reliability Corporation (NERC) welcomes suggestions to improve the reliability of the bulk power system through improved Reliability Standards.

Requested information			
SAR Title:	Federal Energy Regulatory Commission (FERC) Order No. 901 – Milestone 3, Part 3: IBR Modeling Revision		
Date Submitted:	4/29/2024		
SAR Requester			
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Organization:	North American Electric Reliability Corporation (NERC)		
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SAR Type (Check as many as apply)			
<input checked="" type="checkbox"/> New Standard	<input type="checkbox"/> Imminent Action/ Confidential Issue (SPM Section 10)		
<input checked="" type="checkbox"/> Revision to Existing Standard	<input type="checkbox"/> Variance development or revision		
<input checked="" type="checkbox"/> Add, Modify or Retire a Glossary Term	<input type="checkbox"/> Other (Please specify)		
<input checked="" type="checkbox"/> Withdraw/retire an Existing Standard			
Justification for this proposed standard development project (Check all that apply to help NERC prioritize development)			
<input checked="" type="checkbox"/> Regulatory Initiation	<input checked="" type="checkbox"/> NERC Standing Committee Identified		
<input checked="" type="checkbox"/> Emerging Risk (Reliability Issues Steering Committee) Identified	<input type="checkbox"/> Enhanced Periodic Review Initiated		
<input checked="" type="checkbox"/> Reliability Standard Development Plan	<input type="checkbox"/> Industry Stakeholder Identified		
What is the risk to the Bulk Electric System (What Bulk Electric System (BES) reliability benefit does the proposed project provide?):			
<p>This Standards Authorization Request (SAR) is initiated by NERC, with consultation of the Reliability Security Technical Committee, to address directives issued by the Federal Energy Regulatory Commission (FERC) in Order No. 901. FERC issued Order No. 901 on October 19, 2023, which includes directives on new or modified NERC Reliability Standard projects. FERC Order No. 901 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).</p> <p>Within the Order, are four milestones that include sets of directives to NERC. In Order 901, the Federal Energy Regulatory Commission (“FERC”) has directed NERC to propose new or modified standards to mitigate reliability gaps in the current NERC Reliability Standards related to IBRs. Specifically, FERC</p>			

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directed NERC to develop new or modified Reliability Standards to address the following four broad topic areas related to IBRs: (1) data sharing; (2) data and model validation; (3) planning and operational studies; and (4) performance.

In January 2024, NERC filed the initial **Standards Development Work Plan in Response to FERC Order No. 901** (hereafter referred to as the “Work Plan”). A current version of the Work Plan will be maintained [here](#). The Work Plan discusses how NERC will develop Reliability Standards within three tranches (Milestones 2-4) to meet FERC’s filing deadlines. This Standard Authorization Request addresses Milestone 3 – Part 4 of the Work Plan, related to modifying other Reliability Standards that involve model validation or verification for IBR to remove duplicative model validation requirements.

Milestone 3 of the work plan covers the development of data provisioning, parameters, and estimation requirements for IBRs. FERC Order No. 901 directives address three categories of IBR: (1) registered IBR, including sub-Bulk Electric System IBRs to be registered under NERC’s revised Compliance Registry criteria; (2) unregistered IBR; and (3) IBR-DER, to distinguish registered bulk connected IBRs from unregistered bulk connected IBRs as well as the transmission connected IBRs from distribution-connected IBRs.

This SAR does not pertain to specific directives in FERC Order No. 901 directly, rather it is intended to complement the work proposed by the SAR titled **Federal Energy Regulatory Commission (FERC) Order No. 901 – Milestone 3, Part 2: IBR Model Validation**.

Purpose or Goal (What are the reliability gap(s) or risk(s) to the Bulk Electric System being addressed, and how does this proposed project provide the reliability-related benefit described above?):

All FERC directives associated with Milestone 3 of **NERC Standards Development Work Plan to Address FERC Order No. 901** are addressed by the other three SARs submitted by NERC. Most relevant to this SAR is the SAR titled: **Federal Energy Regulatory Commission (FERC) Order No. 901 – Milestone 3, Part 2: IBR Model Validation**. The **IBR Model Validation SAR** includes a holistic set of objectives and scope intended to address validation of IBR model and assure a robust approach to model quality improvement. As revisions to address model validation and improving quality will be addressed by the drafting team assigned the **IBR Model Validation SAR**, other active projects that are addressing IBR model data validation/verification must adjust their Reliability Standard Project scope to remove IBR from the applicability of affected Reliability Standards.

The purpose of this project is to ensure that obligations to conduct model validation for IBR are not duplicative in nature or create competing expectations for IBR to conduct verification/validation of model data for IBR. This drafting team should collaborate as needed with the drafting team for **Federal Energy Regulatory Commission (FERC) Order No. 901 – Milestone 3, Part 2: IBR Model Validation** to assure no gaps are introduced.

Project Scope (Define the parameters of the proposed project):

The Drafting Team shall address the following project objectives:

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1. NERC Standards Development recommends assigning this SAR to the active **Project 2021-01 Modifications to MOD-025 and PRC-019**. If assigned to that project, the drafting team shall remove inverter-based resources from the scope of applicability for MOD-025-2 and PRC-019-2. If assigned to another project, the drafting team shall coordinate with the drafting team of **Project 2021-01 Modifications to MOD-025 and PRC-019** to accomplish this objective.
2. Coordinate with the drafting team of Project **2020-06 Verifications of Models and Data for Generators** to ensure removal of inverter-based resources from the applicability of MOD-026-1 and MOD-027-1.
3. The drafting team shall ensure that implementation plans for new or modified Reliability Standards related to Milestone 3 of the Work Plan are aligned and do not create a reliability gap during implementation.

Detailed Description (Describe the proposed deliverable(s) with sufficient detail for a drafting team to execute the project. If you propose a new or substantially revised Reliability Standard or definition, provide: (1) a technical justification¹ of developing a new or revised Reliability Standard or definition, which includes a discussion of the risk and impact to reliability-of the BES, and (2) a technical foundation document (e.g., research paper) to guide development of the Standard or definition):

The project scope above will need to account for the specific FERC directive text in FERC Order 901 to be successful. The drafting team should consider the specific language in the FERC directives, as well as any comments in FERC Order No. 901 proceeding that FERC directed NERC to consider as part of the standard development process.

FERC Order 901 Directives Assigned to this SAR:

NERC will maintain a current version of NERC Standards Development’s Work Plan to Address FERC Order No. 901 on the NERC website under [Reliability Standards Under Development](#). Included in this Work Plan, is a list of the directives in FERC Order No. 901 and their associated mapping to each SAR submitted by NERC. The Work Plan will be updated should any mapping of FERC directives be reassigned due to ongoing work in the various Standards Development Projects. As of April 1, 2024, this SAR will address no specific directives from FERC Order No. 901. This SAR is necessary to assure that a single solution for model validation using performance data may be established within the Milestone 3 Part 2 drafting team and does not create duplicative requirements. Establishment of data sharing requirements, including the coordination of protection settings and generating resource must be established within Milestone 3 Part 1.

Cost Impact Assessment, if known (Provide a paragraph describing the potential cost impacts associated with the proposed project):

¹ The NERC Rules of Procedure require a technical justification for new or substantially revised Reliability Standards. Please attach pertinent information to this form before submittal to NERC.

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The associated cost with implementation of a new standard is currently unknown, and the modifications necessary for each specific directive are also unknown though they are expected to vary based on SDT outcome.
Please describe any unique characteristics of the BES facilities that may be impacted by this proposed standard development project (<i>e.g.</i> , Dispersed Generation Resources):
Inverter-based resources connected to the transmission system.
To assist the NERC Standards Committee in appointing a drafting team with the appropriate members, please indicate to which Functional Entities the proposed standard(s) should apply (<i>e.g.</i> , Transmission Operator, Reliability Coordinator, etc. See the NERC Rules of Procedure Appendix 5A:
This Project should contain appropriate members representing the following Functional Entities: Balancing Authority Distribution Provider Generator Owner Generator Operator Planning Coordinator Reliability Coordinator Transmission Owner Transmission Operator Transmission Planner Reliability Coordinator
Do you know of any consensus building activities ² in connection with this SAR? If so, please provide any recommendations or findings resulting from the consensus building activity.
FERC Order No. 901 NERC Standards Development Work Plan in response to FERC Order No. 901 Inverter-Based Resource Activities, Quick Reference Guide Distributed Energy Resource Activities, Quick Reference Guide IBR Registration Initiative, Quick Reference Guide
Are there any related standards or SARs that should be assessed for impact as a result of this proposed project? If so, which standard(s) or project number(s)?
<ol style="list-style-type: none"> 1. SARs: <ol style="list-style-type: none"> a. SAR titled: Federal Energy Regulatory Commission (FERC) Order No. 901 – Milestone 3, Part 1: Modeling and Data Sharing Requirements b. SAR titled: Federal Energy Regulatory Commission (FERC) Order No. 901 – Milestone 3, Part 2: IBR Model Validation 2. Active Reliability Standards Projects: <ol style="list-style-type: none"> a. 2020-06 Verifications of Models and Data for Generators

² Consensus building activities are occasionally conducted by NERC and/or project review teams. They typically are conducted to obtain industry inputs prior to proposing any standard development project to revise, or develop a standard or definition.

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- b. 2021-01 Modifications to MOD-025 and PRC-019 (NERC Standards Development recommends assigning the SAR to this active project)
- c. 2022-02 Modifications to TPL-001-5.1 and MOD-032-1
- d. 2022-04 EMT Modeling
- e. 2023-05 Modifications to FAC-001 and FAC-002
- f. 2023-08 Modifications of MOD-031 Demand and Energy Data

Are there alternatives (e.g., guidelines, white paper, alerts, etc.) that have been considered or could meet the objectives? If so, please list the alternatives with the benefits of using them.

Reliability Principles

Does this proposed standard development project support at least one of the following Reliability Principles ([Reliability Interface Principles](#))? Please check all those that apply.

<input checked="" type="checkbox"/>	1. Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
<input checked="" type="checkbox"/>	2. The frequency and voltage of interconnected bulk power systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
<input checked="" type="checkbox"/>	3. Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably.
<input type="checkbox"/>	4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained and implemented.
<input type="checkbox"/>	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk power systems.
<input type="checkbox"/>	6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.
<input type="checkbox"/>	7. The security of the interconnected bulk power systems shall be assessed, monitored and maintained on a wide area basis.
<input type="checkbox"/>	8. Bulk power systems shall be protected from malicious physical or cyber attacks.

Market Interface Principles

Does the proposed standard development project comply with all of the following [Market Interface Principles](#)?

Enter
(yes/no)

1. A reliability standard shall not give any market participant an unfair competitive advantage.	Yes
2. A reliability standard shall neither mandate nor prohibit any specific market structure.	Yes
3. A reliability standard shall not preclude market solutions to achieving compliance with that standard.	Yes
4. A reliability standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to	Yes

Market Interface Principles	
access commercially non-sensitive information that is required for compliance with reliability standards.	

Identified Existing or Potential Regional or Interconnection Variances	
Region(s)/ Interconnection	Explanation
	None

For Use by NERC Only

SAR Status Tracking (Check off as appropriate).	
<input checked="" type="checkbox"/> Draft SAR reviewed by NERC Staff <input type="checkbox"/> Draft SAR presented to SC for acceptance <input type="checkbox"/> DRAFT SAR approved for posting by the SC	<input type="checkbox"/> Final SAR endorsed by the SC <input type="checkbox"/> SAR assigned a Standards Project by NERC <input type="checkbox"/> SAR denied or proposed as Guidance document
Risk Tracking.	
<input type="checkbox"/> Grid Transformation <input type="checkbox"/> Resilience/Extreme Events <input type="checkbox"/> Security Risks	<input type="checkbox"/> Energy Policy <input type="checkbox"/> Critical Infrastructure Interdependencies

Version History

Version	Date	Owner	Change Tracking
1	June 3, 2013		Revised
1	August 29, 2014	Standards Information Staff	Updated template
2	January 18, 2017	Standards Information Staff	Revised
2	June 28, 2017	Standards Information Staff	Updated template
3	February 22, 2019	Standards Information Staff	Added instructions to submit via Help Desk
4	February 25, 2020	Standards Information Staff	Updated template footer
5	August 14, 2023	Standards Development Staff	Updated template as part of Standards Process Stakeholder Engagement Group