NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

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 4: Planning Studies		
Date Submitted:	8/4/2025		
SAR Requester			
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SAR Type (Check as many as apply)

- ☒ New Standard
- ☒ Revision to Existing Standard
- ☐ Add, Modify or Retire a Glossary Term
- ☐ Withdraw/retire an Existing Standard
- ☐ Imminent Action/ Confidential Issue (SPM Section 10)
- ☐ Variance development or revision
- ☐ Other (Please specify)

Justification for this proposed standard development project (Check all that apply to help NERC prioritize development)

- ☒ Regulatory Initiation
- ☐ Emerging Risk (Reliability Issues Steering Committee) Identified
- ☐ Reliability Standard Development Plan
- ☐ NERC Standing Committee Identified
- ☐ Enhanced Periodic Review Initiated
- ☐ Industry Stakeholder Identified

What is the risk to the Bulk Electric System (What Bulk Electric System (BES) reliability benefit does the proposed project provide?):

This Standard Authorization Request (SAR) is initiated by NERC 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).

Within the Order, there are four milestones that include sets of directives to NERC. In the Order, 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 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.

Requested information
In January 2024, NERC filed the initial Standards Development Work Plan to address FERC Order No. 901 directives (hereafter referred to as the "Work Plan"). The Work Plan discusses how NERC will develop Reliability Standards within three tranches (Milestones 2-4) to meet FERC's filing deadlines. Milestone 4 of the Work Plan covers Operations and Planning Assessments. This Standard Authorization Request addresses Milestone 4 – Group 2 of the Work Plan, related to Planning Studies.
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?):
This SAR addresses specific pieces of the NERC filed Work Plan related to Milestone 4 and addresses the various industry comments to meet the regulatory directives of FERC Order No. 901. This project shall coordinate among other projects (i.e., act as a clearing house to tie directive language to standard revisions), develop standard language (i.e., perform the normal duties of a standard development Project). Specifically, the drafting team will address FERC Order No. 901 directives related to planning studies and ensure that impact of IBRs on bulk power system reliability is adequately captured.
Project Scope (Define the parameters of the proposed project):
The FERC Order No. 901 directives assigned to this SAR are outlined in the Detailed Description section below. The project scope shall address all those directives, and should consider the following objectives during the standards development process: 1. Revise the Transmission System Planning Performance Requirements (TPL-001-5.1) standard or create a new standard to incorporate additional considerations for planning studies stemming from including the registered and unregistered IBRs individually and in the aggregate, as well as aggregate DERs in the system model. The Planning models should include adjacent and other planning areas that can adversely impact the area under study. This process shall include: a. Consideration of the required set of grid stress performance conditions (normal and contingency) to be used for planning (i.e., steady state, stability, and short circuit) assessments (but not Extreme Temperature Assessments or long-term energy assessments), where necessary. This could include amendments to Table 1 of TPL-001-5.1, new planning cases to reflect conditions stressful to IBRs, processes to adjust parameters or settings in the planning case that need to be followed, or a combination of the above in order to identify an appropriate wide set of grid stress conditions for steady-state and dynamic grid conditions. b. Ensure that the planning assessments captures the performance of the registered and unregistered IBRs individually and in the aggregate, as well as DERs in the aggregate for the above wide set of grid stress performance conditions c. Ensure that the planning assessments capture the ride through performance of IBRs and other generation resources for the above varied set of grid stress conditions and enhanced stability planning studies.

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d. Ensure the stability planning assessments capture the Bulk Power System Reliability Impacts of the performance of the registered and unregistered IBRs individually and in the aggregate, as well as DERs in the aggregate. The Drafting Team shall ensure that implementation plans for new or modified Reliability Standards related to Milestone 4 of the Work Plan are aligned and do not create a reliability gap during implementation and Ensure consistency in timelines with FERC Orders and Other Reliability Standards under development.
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 justification[1] 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 the 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:** 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. This SAR will address the following FERC Order No. 901 directives: 1. "Finally, by November 4, 2026, NERC must submit new or modified Reliability Standards addressing planning and operational studies for registered IBRs, unregistered IBRs, and IBR–DERs in the aggregate." (P 7) 2. "Pursuant to section 215(d)(5) of the FPA, we adopt the NOPR proposal and direct NERC to develop and submit to the Commission for approval new or modified Reliability Standards that require planning coordinators and transmission planners to include in their planning assessments the study and evaluation of performance and behavior of registered and unregistered IBRs individually and in the aggregate, as well as IBR-DERs in the aggregate, under normal and contingency system conditions in their planning area. These Reliability Standards should require planning coordinators and transmission planners to include in their planning assessments the study and evaluation of the ride through performance (e.g., tripping and momentary cessation conditions) of IBRs in their planning area for stability studies on a comparable basis to synchronous generation resources. The new or modified Reliability Standards should also require planning coordinators and transmission planners to study the Bulk-Power System reliability impacts of registered and unregistered IBRs individually and in the aggregate, as well as IBR-DERs in the aggregate, in their planning models of their area and in

[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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their interconnection-wide area planning models. Further, the new or modified Reliability Standards should also require planning coordinators and transmission planners to study the Bulk-Power System reliability impacts of registered and unregistered IBRs individually and in the aggregate, as well as IBR-DERs in the aggregate, in adjacent and other planning areas that adversely impacts a planning coordinator's or transmission planner's area during a disturbance event." (P 174) 3. "Regarding NERC's recommendations to clarify the types of steady-state and dynamic grid conditions to include in planning studies, we agree that it is important to ensure performance during periods of grid stress. Accordingly, we direct NERC to consider in its standards development process whether to include in new or modified Reliability Standards a requirement that planning coordinators and transmission planners include a wide set of grid stress performance conditions (i.e., both typical and extreme conditions) in planning assessments.[321] Likewise, with regards to NERC's comments related to on-peak and off-peak studies, we direct NERC to consider in the standards development process whether to require planning coordinators and transmission planners to account in planning assessments for both on-peak and off-peak conditions, normal and abnormal (contingency) conditions with high penetration levels of IBRs (i.e., registered IBRs, unregistered IBRs, and IBR-DERs that in the aggregate have a material impact on the Bulk-Power System), and normal and abnormal conditions with low inertia. While we agree with NERC that the above suggestions have merit, we believe that vetting in the standards development process is preferable to determine whether such provisions are beneficial and the scope and language of such provisions. Accordingly, we simply direct NERC to consider these matters without directing a specific outcome." (P 175) 4. "Further, we believe that there is a need to have all of the directed Reliability Standards effective and enforceable well in advance of 2030 and direct NERC to ensure that the associated implementation plans sequentially stagger the effective and enforceable dates to ensure an orderly industry transition for complying with the IBR directives in this final action prior to that date." (P 226)
Cost Impact Assessment, if known (Provide a paragraph describing the potential cost impacts associated with the proposed project):
While the planning studies will require more SME hours as a result of the changes to the standards stemming from this SAR the associated cost with implementation of a new standard is currently unknown.
Please describe any unique characteristics of the BES facilities that may be impacted by this proposed standard development project (*e.g.*, Dispersed Generation Resources):
None
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 (*e.g.*, Transmission Operator, Reliability Coordinator, etc. See the NERC Rules of Procedure Appendix 5A:
Transmission Planner and Planning Coordinator

Requested information
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 RSTC comment process; response to comments received
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)?
1. Standards: a. TPL-001-5.1 b. MOD-026 c. MOD-032 d. MOD-033 e. PRC-024 f. PRC-028 g. PRC-029 2. SARs: a. SAR titled: Federal Energy Regulatory Commission (FERC) Order No. 901 – Milestone 4: Operational Studies b. Three Active Reliability Standard Projects: Project 2020-06 Verifications of Models and Data for Generators c. Project 2020-02 Modifications to PRC-024 (Generator Ride-through) d. Project 2021-01 System Model Validation with IBRs e. Project 2022-01 Reporting ACE Definition and Associated Terms f. Project 2022-02 Uniform Modeling Framework for IBR
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.
Because this SAR is addressing directives from FERC Order No. 901, there are no other alternatives that could meet the objectives.

Reliability Principles	
Does this proposed standard development project support at least one of the following Reliability Principles? Please check all those that apply.	
☒	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.

[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.

Reliability Principles	
☐	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.
☒	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.
☐	4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained and implemented.
☐	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk power systems.
☐	6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.
☐	7. The security of the interconnected bulk power systems shall be assessed, monitored and maintained on a wide area basis.
☐	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 access commercially non-sensitive information that is required for compliance with reliability standards.	yes

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

For Use by NERC Only

Risk Tracking.	
☒ Grid Transformation ☐ Resilience to Extreme Events ☐ Security	☒ Energy Policy ☐ Critical Infrastructure Interdependencies
CMEP Feedback	
☐ Yes ☐ No	

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
6	June 4, 2024	Standards Information Staff	Updated link to the NERC Reliability Principles
7	July 14, 2025	Standards Information Staff	Minor edits to template
8	July 28, 2025	Standards Information Staff	Updated “NERC Only” section to match 2025 RISC report.