

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Industry Webinar

Project 2022-02 Modifications to TPL-001 and MOD-032

June 27, 2023

RELIABILITY | RESILIENCE | SECURITY



- Presenters
 - Standard Drafting Team
 - Chair, John Schmall, Electric Reliability Council of Texas, Inc. (ERCOT)
 - Vice Chair, Jonathan Hayes, Southwest Power Pool (SPP)
 - Member, Cho Wang, The AES Corporation (AES)
 - NERC Staff
 - Ben Wu (Standards Developer)
- Administrative Items
- Project 2022-02 Status and Background
- Proposed Revisions
- Next Steps
- Questions and Answers

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- **Public Announcement**
 - Participants are reminded that this meeting is public. Notice of the meeting was widely distributed. Participants should keep in mind that the audience may include members of the press and representatives of various governmental authorities, in addition to the expected participation by industry stakeholders.
- **Presentation Material**
 - Information used herein is used for presentation purposes and may not reflect the actual work of the official posted materials
- **For the official record**
 - This presentation is not a part of the official project record
 - Comments must be submitted during the formal posting
- **Q&A Session**
 - Q/A feature

Name	Organization/ Company
John Schmall (Chair)	ERCOT
Jonathan Hayes (Vice Chair)	Southwest Power Pool
Patrick Quinn	Great River Energy
Josie Daggett	Western Area Power Administration
Hassan Baklou	SDG&E
Zach Mansell	Tennessee Valley Authority
Qiushi (Cho) Wang	The AES Corporation
Patrick Dalton	Midcontinent Independent System Operator (MISO)
Alexander Stewart	Bonneville Power Administration
Joshua Pierce	Southern Company Services
Mohit Singh	Exelon

- At the January 19, 2022 Standards Committee (SC) meeting, the SC accepted the SARs and authorized soliciting for members for the SARs Drafting Team (DT).
- The informal comment period for the SPIDERWG, IRPWG, and the solicitation for the SAR DT members was from February 1, 2022, to March 2, 2022.
- At the April 20, 2022 SC meeting, the SC appointed chair, vice chair, and members to the Project 2022-02 Modifications to TPL-001 and MOD-032 SARs DT.

- At the September 21, 2022 SC meeting, the SC accepted Modifications to TPL-001 and MOD-032 SARs; authorized drafting revisions identified in the SARs; and appointed the Project 2022-02 SARs DT as the Project 2022-02 SDT.
- The Quality Review (QR) for this posting was performed from February 16, 2023 through March 6, 2023.
- At the May 17, 2023 SC's meeting, the SC authorized initial posting for (Phase One) industry comment and voting.
- Comment period: May 31 – July 14, 2023 with the formal ballot for the final 10 days, July 5 – July 14, 2023.

- Project 2022-02 addresses multiple Standard Authorization Requests (SARs) related to transmission planning and modeling data and analysis.
- The Project 2022-02 Standard Drafting Team (SDT) decided to break this project into two phases since there are two Reliability Standards involved and the project scopes are quite different.
- Phase one addresses MOD-032-1 in data collection and phase two will address TPL-001-5.1 in the accuracy of transmission system planning assessments.

- Origin of the Phase One (MOD-032-1) SAR
 - Submitted by NERC System Planning Impacts of Distributed Energy Resources Working Group (SPIDERWG) on December 15, 2021.
- Industry Need
 - Close reliability gaps caused by large distributed energy resources (DERs).
- Purpose or Goal
 - Revise MOD-032-1 to address gaps in data collection for the purposes of modeling aggregate levels of DERs in planning assessments.
 - Provide clarity and consistency for data collection across PCs and TPs when coordinating with the DP to gather aggregate load and aggregate DER data.

Generators and energy storage technologies connected to the Distribution Provider's system that are capable of providing active power in non-isolated parallel operation with the Bulk Power System.

Rationale:

1. "Technologies connected to the Distribution Provider's system" is chosen to avoid ambiguities associated with defining a distribution system. Distribution Provider is defined by providing the distribution function (this includes entities that may not be NERC-registered Distribution Providers) in NERC glossary definition [1].
2. "Active power" indicates that the scope is focused on only those facilities that may be exporting real power to the power system or offsetting real power load (e.g. residential or commercial rooftop solar, even if they only operate at unity power factor or don't have any reactive power capability). This would exclude examples such as charging-only electric vehicle (EV) installations and controllable load options.
3. "in non-isolated parallel with the Bulk Power System" is to indicate that distributed energy resources with potential BES reliability impacts are those that are actually electrically connected to the BES. Resources that are only operated in an islanded or isolated mode (e.g. back-up generation that only operates when a facility is disconnected from the grid), will not have an impact to the BES and therefore are not of interest from a BES-reliability perspective.

[1] https://www.nerc.com/pa/Stand/Glossary%20of%20Terms/Glossary_of_Terms.pdf

- **Dual Applicability to Planning Authority (PA) and Planning Coordinator (PC)**
 - The SDT concluded this is appropriate because the approved and posted NERC Rules of Procedure documents still use both terms.
 - Explanatory paragraph included in MOD-032-1 refers to synchronization between registration criteria and the NERC functional model will be removed from future version because the NERC functional model is obsolete and was never formally approved.
- **Load-Serving Entity (LSE) was replaced with Distribution Provider (DP)**
 - LSE removed from NERC registry criteria.
 - The DP will be required to provided data items previously required to be provided by the LSE.

4.1.3 ~~Load-Serving Entity~~Distribution Provider

4.1.4 Planning Authority and Planning Coordinator (hereafter collectively referred to as "Planning Coordinator")

Highlighted paragraph to be removed from future versions of MOD-032-2.

This ~~proposed~~ standard combines "Planning Authority" with "Planning Coordinator" in the list of applicable functional entities. The NERC Functional Model lists "Planning Coordinator" while the registration criteria list "Planning Authority," and they are not yet synchronized. Until that occurs, the ~~proposed~~ standard applies to both Planning Authority and Planning Coordinator.

- Minimum DER data expected to be necessary for adequate DER representation.
- DER data obligation assigned to the DP, but the TO is obligated to provide data in cases when there is no NERC registered DP.
- Maintained approach from MOD-032-1:
 - More detailed sub-bullets only presented in the “steady-state” column.
- PC/TP flexibility in data requirements and reporting procedures for DER:
 - Aggregated versus unaggregated data.
 - Reflect local data accessibility and practices.

steady-state

9. Distributed Energy Resource (DER) data⁴ [DP, TO (when DER is not associated with a registered DP)]
 - a. Location (bus from item 1) and if DER feeder is subject to UFLS and/or UVLS
 - b. Real power capability (minimum and maximum)
 - c. Reactive power capability (minimum and maximum)
 - d. Generator type (solar, battery, etc.)
 - e. In-service date or other information to be used to make assumptions about DER capabilities related to ride-through, voltage control and/or frequency control.

dynamics

10. Distributed Energy Resource (DER) data [DP, TO (when DER is not associated with a registered DP)]

⁴The TP/PC modeling data requirements and reporting procedures may require either aggregated or unaggregated data as necessary for local practices and the TP/PC may need to coordinate with the DP/TO to determine appropriate assumptions for equivalent distribution system impedance.

- Knowledge of DER capabilities related to ride-through, voltage control and frequency control are critical to representing DER in BES reliability assessments.
 - Such DER capabilities can be inferred by the in-service date.
 - MOD-032-2 allows TP/PC flexibility in developing requirements and reporting procedures that achieve the same purpose by alternative means.
 - The SDT considered recommendations included in the approved [Reliability Guideline: DER Data Collection for Modeling in Transmission Planning Studies](#).

e. In-service date or other information to be used to make assumptions about DER capabilities related to ride-through, voltage control and/or frequency control.

- Accurately representing DER tripping as part of UFLS and UVLS operation is essential to assessing the design of these programs.
- The SDT considered recommendations from the following approved documents published by NERC SPIDERWG:
 - [Reliability Guideline: Recommended Approaches for UFLS Program Design with Increasing Penetrations of DERs](#)
 - [White Paper: DER Impact to Under Voltage Load Shedding Program Design](#)

a. Location (bus from Item 1) and if DER feeder is subject to UFLS and/or UVLS

- Collecting and modeling a net demand that incorporates offsets due to output from DER is not consistent with a modeling framework that explicitly represents DER.
- Demand data obligation assigned to the DP, but the TO is obligated to provide data in cases when there is no NERC registered DP.

steady-state

2. Aggregate Demand² [~~LSEDP, TO~~ (when a Demand is not associated with a registered DP)]

dynamics

5. Demand [~~LSEDP, TO~~ (when a Demand is not associated with a registered DP)]

² For purposes of this item, aggregate Demand is the gross Demand aggregated at each bus under item 1 that is identified by a Transmission Owner as a load serving bus rather than the net Demand that incorporates offsets due to output from Distributed Energy Resources. A ~~Load-Serving Entity~~Distribution Provider is responsible for providing this information, generally through coordination with the Transmission Owner.

FERC approval/NERC Board Approval	TBD
Definition Effective Date	+2 years from FERC approval
Definition Effective Date (Without Gov Authority)	+2 years from NERC Board Approval
MOD 032 Req 2,3,4	+1 year from the effective date
MOD 032 Effective Date (Gov Authority)	+2 years from FERC approval
MOD 032 (Without Gov authority)	+2 years from NERC board approval

Initial Performance Dates

- Entities shall not be required to comply with Requirements R2, R3, and R4 relating to revised Planning Coordinator/Transmission Planner data requirements and reporting procedures developed under MOD-032-2 Requirement R1 and Attachment 1 until 12 months after the effective date of Reliability Standard MOD-032-2.
- Entities shall continue to comply with Requirements R2, R3, and R4 related to Planning Coordinator/Transmission Planner data requirements and reporting procedures developed under MOD-032-1 Requirement R1 and Attachment 1 during the phased-in compliance period for MOD-032-2.

- Posting
 - Project Page 2022-02 Phase One
 - Comment period May 31 – July 14, 2023 and formal ballot for the final 10 days, July 5 – July 14, 2023
- Point of contact
 - Ben Wu, Senior Standards Developer
 - Ben.Wu@nerc.net or call 470-542-6882
- Webinar posting
 - Three business days
 - Standards Bulletin



Questions and Answers