

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Industry Webinar

Project 2021-02 Modifications to VAR-002

Industry Webinar
June 1, 2023

RELIABILITY | RESILIENCE | SECURITY



Administrative

- Review NERC Antitrust Compliance Guidelines and Public Announcement

Agenda

- Project Background
- Reliability Standard VAR-002-4.1 Revisions
- Q&A

- North American Electric Reliability Corporation (NERC) Antitrust Guidelines
 - It is NERC's policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition. This policy requires the avoidance of any conduct that violates, or that might appear to violate, the antitrust laws. Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition
- Notice of Open Meeting
 - Participants are reminded that this webinar is public. The access number was widely distributed. Speakers on the call should keep in mind that the listening audience may include members of the press and representatives of various governmental authorities, in addition to the expected participation by industry stakeholders.

- Participants are reminded that this webinar is being recorded. The purpose of the recording is to provide individuals an opportunity to review the content following the webinar. Please mute your microphones during the session until the question and answer period. Questions can also be sent via the chat feature during the presentation.

Name	Entity
David Daniels	AEP
Adrian Raducea	DTE Electric
Mark Atkins	AESI
Hans de Boer	Utility Services
Freddy Garcia	ERCOT
C. Scott King	Southern Company Services, Inc.
Gabe Kurtz	TVA
Kristina Marriott	Miller Bros. Solar, LLC
David Plumb	TVA
Robert Staton	Public Service Company of Colorado
Kimberly Turco	Constellation
Eric White	BHE Renewables, LLC
Sean McCormick	ACT Power Services

- Background

- NERC Project 2021-02 proposed revisions address:
 - The NERC Inverter-based Resource Performance Task Force (IRPTF) Standard Authorization Request (SAR) concerning dispersed power producing resource ambiguities in VAR-002 Requirement 3. The IRPTF issued an [IRPTF White Paper, March 2020](#), evaluating today's current standards and requirements of Inverter Based Resources (IBRs) to determine whether current Standards sufficiently address the needs for IBRs.
 - VAR-002 Enhanced Periodic Review (EPR), NERC Project 2016-EPR-02, 19 recommendations for clarity and technical accuracy of the NERC requirements.
 - Recommendations from the EPR team are to be considered by a NERC SDT should the standard be opened for revision.

- IRPTF White Paper – Key Concepts

- For dispersed power producing resources, it is not clear if a Generator Operator (GOP) is required to notify the Transmission Operator (TOP) for status change of voltage control on an individual generating unit.
 - Project 2014-01 revised VAR-002 Standard applicability for Dispersed Generation Resources to Requirement R4 stating, “reporting of status or capability changes as stated in Requirement R4 is not applicable to the individual generating units of dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition.”
 - IRPTF did not identify any reason Requirement R3 should be treated any differently than Requirement R4.
 - IRPTF recommended VAR-002-4.1 be revised for this clarification in Requirement R3.

- Project 2016-EPR-02 VAR-002 – Key Concepts
 - Attachment 5 Recommendations:
 - Clarity
 - Compliance elements
 - Terminology
 - Technical accuracy

- Attachment V recommendations rejected by the SDT:
 - “Requirement R5 does not identify the Transmission Owner for cases where the Transmission Owner owns the generator step-up transformer. Revise Requirement R6 to require the Transmission Owner to communicate settings to the Transmission Operator.”
 - The VAR-002 Reliability Standard is not applicable to the Transmission Owner, the SDT recommends a new SAR to address.
 - “The standard does not address any specific PSS requirements in the VAR standard(s) similar to PSS requirements in VAR-501-WECC-2 (or any subsequent revision), if there is a reliability need.”
 - Providing additional PSS requirements similar to the PSS requirements in VAR-501-WECC-2 was outside the scope of the SAR to provide clarity with a focus on dispersed power producing resources. A SAR can be submitted.

- Purpose and Applicability Sections
 - Updated “Purpose” to show dispersed power producing resource inclusion to clarify the use of “generator” in the current Standard and to align to the Bulk Electric System inclusion terminology.
 - Updated “Applicability” Section 4.2 – Facilities: For the purpose of this standard, “applicable Facility” will mean any generating Facility as defined by the Bulk Electric System.

- Requirements R1 and R2
 - Added “applicable Facility” and “volt/VAR controller” to R1 and R2, and throughout VAR-002-5 draft for inclusion of dispersed power producing resource and consistency of terminology used in other Standards and NERC documentation, e.g., glossary of terms.
 - Added clarity to VAR-002 standard equipment scope to align to BES Generation definition.

- Violation Severity Level (VSL) table - Requirement R2
 - VSL – added introductory phrase to the high VSL stating, “The Generator Operator for each applicable Facility maintained the voltage or Reactive Power schedule, but the Generator Operator did not have a conversion methodology when it monitored voltage at a location different from the schedule provided by the Transmission Operator” to show partial compliance and performance to Requirement R2, but not Requirement R2, Part R2.3.
- Requirement R2, Part 2.1 – Revised in draft two
 - When an applicable Facility’s AVR or volt/VAR controller(s) is out of service or the generator does not have an AVR, the Generator Operator shall use an alternative method to control the generator reactive output to meet the voltage or Reactive Power schedule provided by the Transmission Operator or if no other method of control is available, notify the Transmission Operator as soon as becoming aware of the condition.

- Requirement R3 and Requirement R4
 - Added “functionality” for computing functions or range of functions in a control system in Requirement R3.
 - Added language to clarify the changes impacting voltage control and reactive capability are for changes that degrades or restores from degradation to follow Transmission Operator instruction in Requirements R3 and R4.
 - Added “mutually-agreeable criteria” to provide clarity of how and what reporting threshold to provide notification to the Transmission Operator in Requirements in R3 and R4.

- Requirement R4
 - Removed the word “status” for clarity given that Requirement R4 is requiring notification of change in capability and not status, as in Requirement R3.
 - Removed bulleted language to allow for Transmission Operator to indicate the threshold for reporting in a mutually-agreeable criteria to access Generator Reactive resource capability per VAR-001, Requirement R2
- Requirement R5
 - Changed the time horizon from Real-time to Operations Planning due to 30-day time provided in the requirement.
 - Removed “fixed” to provide technology neutral language and to be inclusive of Load Tap Changing Transformers.

- Requirement R6
 - Capitalized “equipment rating” for NERC defined term.
 - Changed the time horizon from “Real-time Operations” to “Operations Planning.”

- Measures
 - Measure M1 – Restructured last sentence for clarity of exemption from automatic voltage control mode and not voltage schedule.
 - Measures M1-M6 – Minor updates to Measures to align with proposed revisions in the requirements stated in previous slides.
- Footnotes:
 - Footnotes 1 and 6 – added to provide additional clarity to describe volt/VAR controller and mutually-agreeable criteria.

- Devices/equipment that control voltage either directly or indirectly through VAR changes are in scope for applicable Facilities.
- This SDT will not endeavor to develop a definition of dispersed power producing resources, as this is out of scope of the SAR.
- Designation of controlling voltage specifically at the POI is not appropriate, as this could be interpreted to exclude devices/Facilities that directly control voltage at a different location.
- If inverters/batteries do not have a documented capability of providing voltage/reactive power support for the Facility, then they are not subject to VAR-002.
- A retirement of Requirements R5 and R6 would be outside the scope of this project's SAR.
- The Responsible Entity has been removed, as it is to be understood that the entity would be the Generator Operator.

- Providing additional clarity to ambiguity in Requirements R3 and R4 reporting should be determined by Transmission Operator (TOP) for system operation reliability impacts to support VAR-001 R2 and R5. The TOP should provide the threshold of notification for generating resource voltage control status changes and generating resource reactive changes along with voltage or reactive schedule deviation notification criteria. If TOP does not provide this information, the SDT suggest the GOP and TOP would collaborate to have a mutual agreed approach to reporting.

- This project is currently posted for a 45-day additional comment period with 10-day ballot which will close at 8:00 p.m. Eastern on June 23
- Respond to Comments
 - SDT Meetings July 2023, dates TBD
- Point of Contact
 - Laura Anderson, Senior Standards Developer
 - laura.anderson@nerc.net or call 404-782-1870
- Webinar Slides and Recording Posting
 - Within 24-72 hours of Webinar completion
 - Link will be available in the Standards, Compliance, and Enforcement Bulletin

- Informal Discussion
 - Via the Questions and Answers feature.
 - Respond to stakeholder questions.
- Other
 - Some questions may require future SDT consideration.
 - Please reference slide number, standard section, etc., if applicable.
 - SDT will address as many questions as possible.
 - Webinar and chat comments are not a part of the official project record.
 - Questions regarding compliance with existing Reliability Standards should be directed to ERO Enterprise compliance staff, not the SDT.



Questions and Answers