

# Unofficial Comment Form

## Project 2021-02 Modifications to VAR-002-4.1

**Do not** use this form for submitting comments. Use the [Standards Balloting and Commenting System \(SBS\)](#) to submit comments on **Project 2021-02 Modifications to VAR-002-4.1** by **8 p.m. Eastern, Monday, December 19, 2022**.

Additional information is available on the [project page](#). If you have questions, contact Standards Developer, [Laura Anderson](#), or at 404-446-9671.

### Background Information

This project addresses issues identified in three Standard Authorization Requests (SARs).

NERC Project 2021-02 proposed revisions address the NERC Inverter-based Resource Performance Task Force (IRPTF) Standard Authorization Request (SAR) and the VAR-002 Enhanced Periodic Review (EPR), NERC [Project 2016-EPR-02](#), to address ambiguities of voltage and reactive resource Requirements concerning dispersed power producing resources. 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.

For dispersed power producing resources, it is not clear if a GOP is required to notify the TOP for the status change of voltage control on an individual generating unit. NERC [Project 2014-01 Standards Applicability for Dispersed Generation Resources \(nerc.com\)](#) revised VAR-002, Requirement R4, to clarify that it is not applicable to individual generating units of dispersed power producing resources. The IRPTF did not identify any reason why Requirement R3 should be treated differently than Requirement R4 in this respect and recommends VAR-002-4.1 be modified to make this same clarification to Requirement R3.

From a historical perspective, Requirements R3 and R4 dispersed Generation considerations, [Project 2014-01 VAR-002-4 SDT Consideration of Comments](#), provided the following:

Project 2014-01 posted The DGR SDT understands that the generation facilities subject to Inclusion I4 of the BES definition can be comprised of individual generating units that are typically controlled by centralized voltage/reactive controllers that can be considered alternative voltage control devices as listed in Requirement R4. Additionally, there are generation facilities that perform voltage/reactive control at the individual power producing resource. The DGR SDT has determined that a status change of these controllers should be reported regardless of which voltage/reactive control design is used at a facility, which explains why the exclusion was not extended to Requirement R3. The exclusion in Requirement R4 was intended to exclude reporting of an individual generator at a dispersed generating facility coming offline as a change in reactive capability.

The SDT understands that a GOP's voltage controlling equipment and elements differ based on the type of generation facility, and that indeed system configurations vary. However, a "one size fits all" approach would not be appropriate due to the unique characteristics of dispersed generation. Each generation facility may have a different methodology to ensure the facility has an automatic and dynamic response to changes in voltage to ensure the voltage schedule is maintained. It is implied, for example, in NERC VAR-001-3 that each GOP and TOP should understand capabilities of the generation facility and the requirements of the transmission system to ensure a mutually agreeable solution and schedule is used.

There were 19 recommendations from the VAR-002 EPR reviewed by the SDT to be considered for inclusion into the VAR-002 working draft with the objective to address clarity and technical accuracy of the NERC requirements. NERC is required to conduct a periodic review of each NERC Reliability Standard at least once every ten (10) years. Recommendations from the EPR team are to be considered by a NERC Standard Drafting Team should the Standard be opened for revision. Results from review found in Attachment 5, other Miscellaneous Corrections/Revisions, recommendations for clarity, compliance elements, terminology, and technical accuracy recommendations were accepted by the Project 2021-02 SDT acknowledging that the 2016 EPR recommendations were not addressed in the currently enforceable Reliability Standard and could provide more clarity to the requirements for IBRs and other Generation voltage control resources.

#### **Summary of proposed revisions:**

- Introduction – Updated Purpose and Applicability sections for clarity of dispersed Generation applicability.
- Requirements R1, R2 – Added "dispersed power producing resource" and "volt/VAR controller(s)" for inclusion and added clarity to VAR-002 Standard (EPR Attachment 5 Recommendation 10.1).
- Requirement R2, Part 2.1 – Added "control capability is limited" conditions for dispersed power producing resource if partial outage of facility voltage control equipment (EPR Attachment 5 Recommendation 10.2).
- Requirement R2, Part 2.3 – Removed "specified by the Transmission Operator" to remove confusion of whether voltage schedule or methodology is being referred to in the requirement (EPR Attachment 5 Recommendation 2.1).
- Requirements R3, R4 – Added "in a mutually-agreeable format" and to provide clarity of how to provide notification to the Transmission Operator (EPR Attachment 5 Recommendations 2.4 and 2.6).
- Requirement R3 – Added "degrades/restores its ability to automatically control (EPR Attachment 5 Recommendation 14.2).
- Requirement R3 – Added "functionality" for computing functions or range of functions in a control system, such as the Power System Stabilizers or aggregated volt/VAR controller (EPR Attachment 5 Recommendation 14.1).
- Requirement R4 – Added language for threshold of notification that indicates Transmission

~~Generator~~ Operator needs to provide notification criteria to Generator Operator to assess the system reactive resource per VAR-001 R2 (EPR Attachment 5 Recommendation 2.3).

- Requirement R4 – Removed language that stated R4 is not applicable to individual generating units and rather have Transmission indicate the threshold for not applicable for assessing Generator Reactive resources per VAR-001, Requirement R2 (EPR Attachment 5 Recommendations 2.7 - 2.9).
- Requirements R3 – Added language to clarify the changes impacting voltage and reactive control equipment are for changes that degrades/restores its ability to follow Transmission Instruction (EPR Attachment 5 Recommendation 2.5).
- Requirement R5 – Changed the time horizon from Real-time to Operations Planning due to 30-day time provided in the requirement (EPR Attachment 5 Recommendation 4.1).
- Requirement R5, part 5.1.2 – Removed “fixed” to provide technology neutral language and to be inclusive of Load Tap Changing Transformers (EPR Attachment 5 Recommendation 6.1).
- Requirement R6 – Capitalized “equipment rating” for NERC defined term (EPR Attachment 5 Recommendation 2.2).
- Requirement R6 – Changed the time horizon from “Real-time Operations” to “Operations Planning” (EPR Attachment 5 Recommendation 4.2).
- Measure M1 – Restructured last sentence for clarity of exemption (EPR Attachment 5 Recommendation 4.4).
- Measures M1-M6 – Minor updates to the measures to align with proposed changes in the requirements.

## Questions

1. Do you agree that dispersed power producing resource language and Facilities definition provides clarity to proposed VAR-002-5 applicability and better aligns to the BES definition terminology? If no, please explain and provide recommendations.

Yes  
 No

Comments:

Applicability Section 4.2 Facilities does not appear to add clarity. Please consider removing Applicability Section 4.2 “Facilities: For the purpose of this standard, the term “generator” means a generator-owned facility capable of controlling voltage.”

2. Do you agree that the additional words, “mutually-agreeable format” in Requirements R3 and R4 will address ambiguities and provide a means to get the clarity needed for notification threshold and medium communication? If no, please explain and provide recommendations.

Yes  
 No

Comments:

3. Throughout proposed VAR-002-5, the Project 2021-02 SDT has replaced/changed the words “automatic voltage regulator (AVR)” with the more comprehensive “automatic voltage regulator (AVR) or volt/VAR controller(s)” to add clarity and to better align with expressions/wording used in other NERC Reliability Standards, such as MOD-026. Do you agree with this change? If no, please explain and provide recommendations.

Yes  
 No

Comments:

4. The Project 2021-02 SDT has made revisions to the requirements for VAR-002-5 based on the recommendations resulting in Attachment 5 from the efforts of the Project 2016-EPR-02 Enhanced Periodic Review Team. Do you agree with these changes? If no, please explain and provide recommendations.

Yes  
 No

Comments:

Please see question 1 and 8 comments for suggested improvements.

5. Do you believe that proposed Reliability Standard VAR-002-5 can be met in a cost-effective manner? If you do not agree, or if you agree but have suggestions for improvement to enable more cost effective approaches, please provide your recommendation and, if appropriate, technical or procedural justification. Please provide the reasoning or justification for your position in the comments.

- Yes  
 No

Comments:

6. The Project 2021-02 SDT has proposed a one-year implementation period. Would this proposed timeframe provide for enough time to put into place process, procedures, or technology to meet the proposed language of the Implementation Plan? If you think an alternate timeframe is needed, please propose an alternate implementation time period and provide a detailed explanation of actions planned to meet the implementation deadline.

- Yes  
 No

Comments:

7. The Project 2021-02 SDT believes that the language of proposed Reliability Standard VAR-002-5 addresses the issues outlined in the project SAR. Do you agree? If you agree but have suggestions for improvement to enable more cost effective approaches, please provide your recommendation and, if appropriate, technical or procedural justification.

- Yes  
 No

Comments:

Please see questions 1 and 8 comments for suggested improvements.

8. Provide any additional comments on proposed Reliability Standard VAR-002-5 and technical rationale document for the standard drafting team to consider, if desired.

Comments:

Please consider clarifying Requirement R3 regarding “degrades/restore.” Should there be a threshold for Generator Operator notifications to the Transmission Operator? Please consider if R3, as written, may result in compliance disputes.

RE: Compliance Section C. Please consider removing “The Compliance Monitor shall retain any audit data for three years.” The requirement for the “Compliance Monitor” does not appear to be necessary for section 1.2 Evidence Retention. In addition, in Compliance section 1.1, please consider adding (CEA) as the abbreviation for Compliance Enforcement Authority. In section 1.2, please consider using the CEA abbreviation.