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)](https://sbs.nerc.net/) to submit comments on draft three of Reliability Standard **VAR-002-5 - Generator Operation for Maintaining Network Voltage Schedules** by **8 p.m. Eastern, Monday, November 6, 2023.   
m. Eastern, Thursday, August 20, 2015**

Additional information is available on the [project page](https://www.nerc.com/pa/Stand/Pages/Project-2021-02-Modifications-to-VAR-002.aspx). If you have questions, contact Senior Standards Developer, [Laura Anderson](mailto:laura.anderson@nerc.net), or at 404-782-1870.

## 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) SAR and the VAR-002 Enhanced Periodic Review (EPR), NERC [Project 2016-EPR-02](https://www.nerc.com/pa/Stand/Project%202016EPR02%20Enhanced%20Periodic%20Review%20of%20VAR/Project_2016_EPR_02_Template_VAR-002-4_06022017_Final.pdf), to address ambiguities of voltage and reactive resource Requirements concerning dispersed power producing resources. The IRPTF issued an [IRPTF White Paper, March 2020](https://www.nerc.com/pa/Stand/Project%20202102%20Modifications%20to%20VAR00241%20DL/Review_of_NERC_Reliability_Standards_White_Paper_04142021.pdf), 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 Generator Operator (GOP) is required to notify the Transmission Operator (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)](https://www.nerc.com/pa/Stand/Pages/Project-2014-01-Standards-Applicability-for-Dispersed-Generation-Resources.aspx) 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](https://www.nerc.com/pa/Stand/Prjct201401StdrdsAppDispGenRes/Consideration_of_Comments_DGR_VAR-002_v3_10292014.pdf), 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 Standard Drafting Team (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 SDT 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.

The generating resource(s), e.g., generator, dispersed power producing, will have met the NERC glossary of terms definition of inclusion to the Bulk Electric System and have capability to provide reactive support and voltage control to be required to follow the proposed VAR-002-5 NERC Reliability Standard. Unless exempted by the Transmission Operator, a generating resource(s) voltage or reactive power schedule is to be provided by the Transmission Operator with instruction for following the schedule or otherwise meet the conditions of notification for deviating from schedule. Each Generator Operator shall coordinate and cooperate with the Transmission Operator to provide necessary data, upon request, to determine proper reporting of the generating resource(s) voltage control and reactive capability changes for reliable real time system operations.

The generating resource(s) are a primary source of dynamic voltage control for the Transmission system. Generating resource(s) reactive resources within the plant’s control are included in the Transmission system reactive support to be operated in a manner that maximizes stable control of the electric grid.

Each generating resource(s) 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 that each GOP and TOP should understand capabilities of the generating resource(s) and the requirements of the transmission system to ensure a mutually agreeable solution and schedule is used.

Questions

1. Do you agree with the language in proposed VAR-002-5 Purpose section? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.

Yes

No

Comments:

1. Do you agree with the language in proposed VAR-002-5, Requirement R3? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.

Yes

No

Comments:

1. Do you agree with the language in proposed VAR-002-5, Requirement R4? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.

Yes

No

Comments:

1. Do you agree with the language in proposed VAR-002-5, of “generating resource(s)” for Requirements R1, R2, R5 and R6? If you do not agree, please provide your recommendation and, if appropriate, technical or procedural justification.

Yes

No

Comments:

1. Provide any additional comments on the standard and technical rationale for the SDT to consider, if desired.

Comments: