

Implementation Plan

Project 2023-02 Analysis and Mitigation of BES Inverter-Based Resource Performance Issues Reliability Standard PRC-030-1

Applicable Standard(s)

- PRC-030-1 Unexpected Inverter-Based Resource Event Mitigation

Requested Retirement(s)

- None

Prerequisite Standard(s)

These standard(s) or definitions must be approved before the Applicable Standard becomes effective:

- PRC-028-1 Disturbance Monitoring and Reporting Requirements for Inverter-Based Resources
- PRC-029-1 Frequency and Voltage Ride Through Requirements for Inverter-Based Generating Resources

Applicable Entities

- Generator Owner (GO)

Background

Multiple NERC disturbance reports,¹ including the Odessa disturbance report,² identified the undesired performance of bulk power system (BPS)-connected inverter-based resources (IBRs) during grid faults, and have elaborated on the systemic and significant BPS reliability risks that this undesired performance can pose. IBRs may trip for many different reasons, may cease current injection due to inverter controls, or may have unwanted plant-level controller interactions. These types of issues have been extensively documented in the NERC reports. The resulting unexpected and unwarranted loss of generation poses a significant risk to BPS reliability. Project 2023-02 was initiated to address the reliability-related need and benefit by requiring analysis and mitigation of unexpected or unwarranted protection and control operations from inverter-based resources following the identification of such a performance issue.

¹ <https://www.nerc.com/pa/rrm/ea/Pages/Major-Event-Reports.aspx>

² <https://www.nerc.com/pa/rrm/ea/Pages/May-June-2021-Odessa-Disturbance.aspx>

After Project 2023-02 was initiated, FERC issued Order No. 901,³ which directs the development of new or modified reliability standards, including new requirements for disturbance monitoring, data sharing, post-event performance validation, and correction of IBR performance. In January 2024, NERC submitted a filing to FERC outlining a comprehensive work plan to address the directives within Order No. 901⁴. Within the work plan, NERC identified three active Standards Development Projects that would need to be filed for regulatory approval with FERC November 4, 2024. These projects include 2020-02 Modifications to PRC-024 (Generation Ride Through),⁵ 2021-04 Modifications to PRC-002-2,⁶ and 2023-02 Analysis and Mitigation of BES Inverter-Based Resource Performance Issues.⁷

General Considerations

The requested implementation timeline allows for ample time for entities to draft and implement their process. The information required for standard compliance is currently available to Generator Owners.

Effective Date

The effective date for the proposed Reliability Standard is provided below.

Standard PRC-030-1

Where approval by an applicable governmental authority is required, Reliability Standard PRC-030-1 shall become effective on the first day of the first calendar quarter that is six months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.

Where approval by an applicable governmental authority is not required, Reliability Standard PRC-030-1 shall become effective on the first day of the first calendar quarter that is six months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

³ *Reliability Standards to Address Inverter-Based Resources*, Order No.901, 185 FERC ¶ 61,042 (2023); https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20231019-3157&optimized=false

⁴ See *Informational Filing of the N. Am. Elec. Reliability Corp. Regarding the Development of Reliability Standards Responsive to Order No. 901.*, Docket No. RM22-12-000 (January 18, 2024).

⁵ See NERC Standards Development Project page for Project 2002-02; https://www.nerc.com/pa/Stand/Pages/Project_2020-02_Transmission-connected_Resources.aspx

⁶ See NERC Standards Development Project page for Project 2021-04; <https://www.nerc.com/pa/Stand/Pages/Project-2021-04-Modifications-to-PRC-002-2.aspx>

⁷ See NERC Standards Development Project page for Project 2023-02; <https://www.nerc.com/pa/Stand/Pages/Project-2023-02-Performance-of-IBRs.aspx>