Background Information

On November 27, 2018, the NERC Operating Committee (OC) and Planning Committee (PC) submitted a Standard Authorization Request (SAR) prepared by the Inverter-Based Resource Performance Task Force (IRPTF), which reports to the OC and PC.

In 2017, the OC and PC convened the IRPTF shortly after it became clear that inverter-based generation was dropping off-line during normally cleared Bulk Power System (BPS) line faults. The NERC IRPTF supported NERC and WECC staff in the analysis of the Blue Cut Fire and Canyon 2 Fire disturbances in southern California. As a stakeholder group of industry experts, the IRPTF developed recommended performance characteristics from inverter-based resources connected to the BPS from the key findings and recommendations in the reports on the analysis.

The recommended performance is documented in the NERC Reliability Guideline: BPS-Connected Inverter-Based Resource Performance, published September 2018. During the disturbance analyses and development of the Reliability Guideline, the IRPTF identified potential modifications to PRC-024-2 to help ensure that inverter-based generator owners, operators, developers, and equipment manufacturers understand the intent of the standard in order for their plants respond to grid disturbances in a manner that contributes to the reliable operation of the BPS.

This SAR proposes to revise PRC-024-2 to address the issues identified in the standard.

Instructions for Commenting

Please enter comments in simple text format. Bullets, numbers, and some special formatting may not be retained.
Questions

1. Do you agree with the project scope as outlined in the SAR? If you do not agree, or if you agree but have comments or suggestions, provide your recommendation or proposed modification below:

☐ Yes
☒ No

Comments:
Reliability standards should be technology neutral. The project scope should be limited to removing ambiguity from the standard. Technical Rationale documents and/or Compliance Implementation Guidance documents could be written if the drafting team determines that further explanation is needed for inverter-based generation.

2. Do you agree with the Detailed Description section of the SAR? If you do not agree, or if you agree but have comments or suggestions, provide your recommendation or proposed modification below:

☐ Yes
☒ No

Comments:
Reliability Standards should be technology neutral. The detailed description should be limited to removing ambiguity from the standard. Technical Rationale documents and/or compliance Implementation Guidance documents could be written if the drafting team determines that further explanation is needed for inverter-based generation.

We propose the following clarifications be added to the detailed description of the SAR:

• The Generator Owner and/or manufacturer of the equipment should convert their phase voltage measurements to positive-sequence values. We propose that the term ‘positive-sequence’ be added as follows:
  “If RMS, clarify that the RMS signal pertains to positive-sequence to the fundamental frequency RMS signal rather than the true RMS signal.

• It is not clear what is meant by start, stop, and reset under Item 5 on page 5 of SAR. Please clarify what is meant by each position.

The region outside the trip curve should reflect equipment limitations only and not simply be a “May Trip” zone. Generators should provide grid support during disturbances until equipment limitations are reached. We propose that the detailed description clarifies that for inverters not yet installed, momentary cessation should be completely prohibited in the ‘No Trip’ zone. For
inverters already installed, the only time momentary cessation can be used in the ‘No Trip’ zone is, if it has been reported as an equipment limitation as per Requirement R3.

3. If you have any other comments on this SAR that you haven’t already mentioned above, provide them here:

Comments:

The SAR should not restrict the SDT from offering alternative solutions to what is proposed in the details of the SAR and in the GAPS whitepaper. An alternative solution for consideration would be to increase the ride-through time and have inverter-based units stay connected for longer periods. Please consider rewording the details contained in the SAR to allow for the problems to be addressed but not be read as the “only” way the issue can be addressed by the SDT.