Potential Reliability Rule 151: Establish minimum interconnection standards for Large Inverter Based Resource (IBR) Generating Facilities based on IEEE Standard 2800 - 2022

NYSRC presentation to NYISO Operating Committee

November 16, 2023

NYSRC Potential Reliability Rule Procedures

https://www.nysrc.org/wp-content/uploads/2023/03/POLICY-1-11-Final-2-7-17.pdf

Policy 1, Section 3: Process for Developing or Modifying a Reliability Rule

- Step 1 - Request to Develop or Modify Reliability Rules
  - IEEE Standard 2800 - 2022 approved: 2/9/22
  - PRR 151 under development in RRS through 2022
  - NYSRC hosted an IBR Seminar at NYISO: 9/13/22
  - IBR WG formed with stakeholders to advise on PRR 151: 11/8/22
  - RRS developed initial draft of PRR 151: 1/8/23
- Step 2 - RRS Review of Requests to Develop or Modify Reliability Rule
  - RRS review & final draft of PRR 151 developed: 3/13/23
- Step 3 - Draft Rule Posted for Comment
  - 45 day comment period PRR 151: 3/13/23 - 4/27/23
- Step 4 - RRS Review of Comment
  - Extensive comments received from stakeholders
  - RRS review of comments: 4/27/23 - 11/1/23
  - RRS/NYISO meetings
  - PRR 151 revised based on comments received: 11/1/23
- Step 5 - Executive Committee Review and Vote on Final Draft Rule
  - Executive Committee approved reposting revised PRR 151 for 30 day comment period: 11/9/23
- Step 6 - Dissemination of the Reliability Rules
- Step 7 - Rule Implementation
- Step 8 - Dispute Resolution

PRR 151: Establish minimum interconnection standards for Large Inverter Based Resource (IBR) Generating Facilities based on IEEE Standard 2800 - 2022

- Need for change
  - FERC, NERC, NPCC and TOs are all addressing IBR interconnection criteria but there are presently no comprehensive standards adopted
    - FERC Order 2023, Improvements to Generator Interconnection Procedures and Agreements, 7/29/23
    - FERC Order 901, Reliability Standards to Address Inverter Based Resources, 10/19/23
  - Recent major disturbances in California, Texas & Utah involving mis-operation of IBR resources have highlighted need for IBR standards (At least 12 NERC Disturbance reports on events with ~1,000 MW of IBRs entering into momentary cessation or tripping in the aggregate)
  - NYSRC is proposing PRR 151 to apply to all future large IBR projects seeking interconnection to NYCA
  - Urgency emphasized by ~120,000 MW of IBR resources in the 6/30/23 NYISO interconnection queue
- Focus of PRR 151
  - Adoption of IEEE 2800 - 2022 as amended for NYCA application
  - Limit the scope of PRR 151 to the interconnection study stage of the as-designed IBR Plant
  - As-designed IBR Plant to be compliant with amended IEEE 2800-2022, with models and data supplied by the IBR Developer for use in NYISO Interconnection Studies to accurately simulate the performance of their compliant IBR plant

PRR 151: Establish minimum interconnection standards for Large Inverter Based Resource (IBR) Generating Facilities based on IEEE Standard 2800 - 2022

Key requirements of PRR 151 for IBR Plant Developer

- R2. Each Large IBR Generating Facility Developer subject to the NYISO's *Interconnection Studies* process shall:
  - R2.1. Attest that their IBR plant will be designed to be in compliance with the mandatory requirements of IEEE 2800-2022, as amended by "NYSRC Procedure for Application of IEEE 2800-2022 Standard for Large IBR Generating Facilities for the New York Control Area".
  - R2.2. Attest that the models and data provided for use in NYISO's *Interconnection Studies* accurately simulate the performance of their compliant IBR plant per R2.1.

PRR 151: Establish minimum interconnection standards for Large Inverter Based Resource (IBR) Generating Facilities based on IEEE Standard 2800 - 2022

Key requirements of PRR 151 for NYISO

- R1. The NYISO shall prepare and maintain procedures for the NYISO's *Interconnection Studies* process requiring that *Large IBR Generating Facility Developers*:
  - R1.1. Attest that their IBR plant will be designed to be in compliance with the mandatory requirements of IEEE 2800-2022, as amended by "NYSRC Procedure for Application of IEEE 2800-2022 Standard for the New York Control Area".
  - R1.2. Attest that the models and data provided for use in NYISO's *Interconnection Studies* accurately simulate the performance of their compliant IBR plant per R1.1.

PRR 151: Establish minimum interconnection standards for Large Inverter Based Resource (IBR) Generating Facilities based on IEEE Standard 2800 - 2022

Exclusions from IEEE 2800 - 2022 in PRR 151

- Section 8: Power Quality
  - Better addressed by local TO requirements
- Section 10: Modeling Data
  - Verified models and data based on actual as-built equipment for fundamental frequency and EMT studies (not available at the interconnection study stage)
- Section 11: Measurement Data for Performance Monitoring and Validation
  - Post-commissioning disturbance analysis for model validation
- Section 12: Test and Verification Requirements
  - Commissioning and post-commissioning testing

PRR 151: Establish minimum interconnection standards for Large Inverter Based Resource (IBR) Generating Facilities based on IEEE Standard 2800 - 2022

Next Steps

- Implementation of revised PRR 151
  - All Large IBR Generating Facilities in all Class Year studies or equivalent of Class Year studies succeeding CY 2023, including transition studies
- The NYSRC website has process instructions for commenters as well as the revised PRR 151 (PRR 151: 11-1-23 Clean) and the associated Procedure documents
  - https://www.nysrc.org/rule-postings/reliability-rule-revisions/
  - Comments are due by COB 12/11/23
  - Comments to be submitted to the NYSRC Secretary Herb Schrayshuen: herb@poweradvisorsllc.com