PRR 151: 10-9-23 Revision

Request to Develop or Modify Reliability Rules and Requirements (NYSRC Policy No. 1-11)
Submit request to herb@poweradvisorsllc.com **via the NYSRC site** www.nysrc.org.

Item	Information
1. PRR No. & Title of Reliability Rule or Requirement change	**PRR 151: Establish minimum interconnection standards for Large Inverter Based Resource (IBR) Generating Facilities based on IEEE Standard 2800-2022**
2. Rule Change Requester Information	
Name	RRS
Organization	NYSRC
3. New rule or revision to existing rule?	New rule. B.5: Establishing New York Control Area (NYCA) Interconnection Standards for Large IBR Generating Facilities
4. Need for rule change, including advantages and disadvantages	The NYISO Interconnection Queue as of 6/30/23 has approximately 120,000 MWs of Large Facility (>20 MW) Inverter Based Resources (IBR). NYSRC does not presently have specific IBR interconnection criteria in its Reliability Rules. PRR 151 is therefore proposed for EC approval to be applicable to all future IBR projects seeking interconnection to the NYCA. This proposal is based upon: (1) recent disturbances in Texas, California and Utah where IBRs failed to perform reliably; (2) the cumulative magnitude of IBRs in NYCA per New York State's CLCPA mandates; (3) NERC's recommendation for Authorities Governing Interconnection Requirements (AGIR) to immediately adopt IEEE Standard 2800-2022; (4) FERC's RM22-12-000 NOPR on Reliability Standards to Address Inverter Based Resources; and (5) FERC Order 2023 on Improvements to Generator Interconnection Procedures and Agreements. PRR 151 is based upon a critical subset of IEEE Standard 2800-2022 requirements, as amended for NYCA interconnection applicability. Further revisions to incorporate and adopt all pertinent IEEE Standard 2800-2022 requirements will be included in subsequent PRRs. The advantage to immediate adoption of PRR 151 is that it establishes minimum IBR interconnection criteria critical to NYCA reliability as NYCA transitions to higher penetration of inverter-based resources per CLCPA mandates. There are no disadvantages.
5. Related NYSRC rules	Reliability Rule B.4 - Transmission System Interconnection Special Studies Reliability Rule I - Modeling and Data, I.4 - Transmission Data
6. Section A – Reliability Rule Elements	
1. Reliability Rule	**NYISO's Interconnection Studies for Large (>20 MW) IBR Generating Facilities shall be based on IBR Plants compliant with the IEEE 2800-2022 Standard as amended for NYCA application, and their associated IBR models and data.**

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2. Associated NERC Standards & NPCC Standards and Criteria	NPCC: Directory 1 NERC: All Standards under review for IBR application IEEE: Standard 2800-2022 "IEEE Standard for Interconnection and Interoperability of Inverter-Based Resources (IBRs) Interconnecting with Associated Transmission Electric Power Systems"
3. Applicability	Interconnection Studies of Large IBR Generating Facilities
7. Section B - Requirements	R1. The NYISO shall prepare and maintain procedures for IBR interconnection studies requiring that Large IBR Generating Facility~~-~~ Developer's~~Owners~~: R1.1. Attest that their ~~as-designed~~ IBR Plant will be ~~is~~ 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. Provide models and data for use in NYISO's interconnection studies that accurately simulate the performance of their compliant IBR Plant per R1.1. R2. Each Large IBR Generating Facility ~~Owner~~Developer subject to the NYISO's interconnection process shall: R2.1. Attest that their ~~as-designed~~ IBR Plant will be designed to be ~~is~~ 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. Provide models and data for use in NYISO's interconnection studies that accurately simulate the performance of their compliant IBR Plant per R2.1.
8. Section C – Compliance Elements	
1. Measures	M1. The NYISO self-certified and provided evidence that it had procedures in place for implementing the Large IBR Generating Facility ~~Owner~~Developer's interconnection requirements in accordance with R1.1 and R1.2 M2. The NYISO certified that each Large IBR Generating Facility ~~Owner~~Developer attested to the IEEE 2800-2022 compliance requirements in R2.1, and provided models and data as required by R2.2.
2. Levels of Non-Compliance	2.1 Measure 1: Level 1: Not applicable Level 2: Not applicable. Level 3: The NYISO had procedures covering requirement R1.1 but failed to have procedures for requirement R1.2. Level 4: Not applicable. 2.2 Measure 2:

Commented [RC1]: I still have a problem with the future tense of this requirement. It's a potential loop hole, the developer does not have to attest to as-designed compliance with IEEE 2800 for interconnection studies with this wording. It's only a future requirement. I prefer "is designed to be in compliance". The developer has to have a paper/desk design before making a NYISO request for interconnection. Please comment.

	Level 1: Not applicable. Level 2: Not applicable. Level 3: The NYISO certified that the required attestation, and models and data, was submitted to the NYISO in accordance with R.2.1 and R.2.2 but was incomplete in one or more areas for one or more Market Participants. Level 4: Not applicable.

3. Compliance Monitoring Process (See Policy 4)	No change.
3.1 Compliance Monitoring Responsibility	No change.
3.2 Reporting Frequency	No change
3.3 Compliance Reporting Requirements	No change
9. Implementation Plan	This new rule to be applicable to: • All IBR projects in all Class Year studies or equivalent of Class Year studies succeeding CY 2023; • All new Large Generating Facilities IBR projects applying to enter the NYISO's Interconnection Queue as of the date of the first Class Year succeeding CY 2023.

10. Comments	1. IEEE Standard 2800-2022: "IEEE Standard for Interconnection and Interoperability of Inverter-Based Resources (IBRs) Interconnecting with Associated Transmission Electric Power Systems" is covered by IEEE Copyright, available through IEEE Xplore: https://ieeexplore.ieee.org/document/9762253
	2. New Glossary Terms:
	• "Large IBR Generating Facility" in this PRR is based on:
	  • IEEE Standard 2800-2022 definition of a grouping of one or more IBR unit(s) and possibly supplemental IBR device(s) operated by a common Facility level controller along with a collector system to achieve the performance requirements of this standard at a single reference point of applicability (RPA), and
	  • FERC's definition of Large Generating Facilities having capacities greater than 20 MWs.
	• "Interconnection Studies" in this PRR are based upon NYISO's Optional Feasibility, System Impact and Class Year Studies, as described in "The NYISO Interconnection Process" document https://www.nyiso.com/documents/20142/35688159/2023-NYISO-Interconnection-Process-Report.pdf.
	• "IBR Plant Developer" as used in this PRR includes an IBR Plant Developer or IBR Plant Owner or IBR Plant Operator.
	3. IEEE 2800-2022 requirements for this PRR specifically apply to the IBR ~~Owner~~Developer ~~and/or Operator~~ where:
	• Requirements designated with the word "shall" are mandatory.
	• Requirements designated with the words "should", "may" or "can" are not mandatory.
	4. Exclusions from the requirements in IEEE 2800-2022 for this PRR are:
	• Section 8: Power Quality
	• Section 10: Modeling Data
	• Section 11: Measurement Data for Performance Monitoring and Validation
	• Section 12: Test and Verification Requirements
	5. Miscellaneous Notes
	• EMT models and studies are not required by this PRR but may be required by the as-built requirements per Note 4~~noted~~ above, to be covered in future PRRs.
	• IEEE Standard 2800-2022 does not explicitly specify requirements for HVDC facilities. However, it does include requirements for VSC-HVDC transmission facilities connecting isolated IBR to the AC transmission system.
	• IBR models and data for IBR plant compliant with IEEE Standard 2800-2022 may be modified as the IBR plant progresses through the interconnection process. The procedures for obtaining the as-designed models and data, and their updating during the various stages of interconnection are addressed by NYSRC's existing Reliability Rule I - Modeling and Data, I.4 - Transmission Data.

11. Date Rule Adopted	
12. PRR Revision Dates	1/8/2023; 1/9/23, 2/16/23, 2/22/23, 3/1/23, 3/6/23, 9/28/23, 9/29/23, 10/9/23

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