



VIA ELECTRONIC DELIVERY

December 21, 2023

Mr. Herbert Schrayshuen  
Secretary  
New York State Reliability Council

Mr. Christopher Wentlent  
Executive Committee Chair  
New York State Reliability Council

**Re: Revised Proposed IBR Reliability Rule 151 & Procedure**

Gentlemen,

The Alliance for Clean Energy New York (ACE NY) appreciates the opportunity to provide this feedback to the New York State Reliability Council (NYSRC) on Proposed Reliability Rule 151 (PRR151) released on November 1, 2023: *Establish minimum interconnection standards for Large Inverter Based Resource (IBR) Generating Facilities based on IEEE Standard 2800™ 2022 (IEEE 2800)*.

We appreciate the efforts to revise the rule to date to address New York's system as it evolves in response to the State's nation-leading clean energy initiatives. On behalf of our member companies, ACE NY offers the following comments and suggestions designed to improve the rule's effectiveness while further facilitating clean energy development in New York:

**1. PRR 151 should not apply to projects in the queue as of 12/8/23.**

Item 4 of PRR 151 states:

*“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.” (emphasis added)*



ACE NY appreciates that the NYSRC has made it clear PRR 151 will not apply to projects in completed Class Years and projects currently in Class Year 2023. That point was discussed at length during NYSRC presentations at NYISO committees. Expressly recognizing that new obligations should not be placed on projects that have completed the NYISO's interconnection process is a critical step forward and a major improvement to the draft rule. The same rationale applies with equal force to modifications to these projects as they are being permitted and constructed. **ACE NY thus respectfully requests that the NYSRC further revise PRR 151 to clarify that modifications to these projects are also exempt if they do not require an entirely new interconnection study to be conducted, including any additions or expansions thereto.**

With respect to the rule's proposed applicability to future projects seeking interconnection, ACE NY urges the NYSRC to carefully assess New York's system needs and circumstances. While the experiences in other regions can be instructive, they are not determinative. New York's region-specific characteristics, including its upstate versus downstate dichotomy, must be considered. ACE NY has previously taken the position that PRR 151 (or any new versions, or modifications thereto) should not apply to projects already in queue that will have to withdraw and enter the transitional cluster upon the NYISO's implementation of its new Order No. 2023-mandated interconnection process. **ACE NY continues to believe existing projects that have already entered the interconnection queue, as of December 8, 2023, should be exempt from this reliability rule.**

## **2. PRR 151 Should Require Design to IEEE 2800-2022, but not an Attestation.**

ACE NY respectfully requests the following amendments to PRR 1515, Item 7:

R1. The NYISO shall prepare and maintain ~~procedures~~ **rules** for the NYISO's Interconnection Studies process requiring that each *Large IBR Generating Facility Developers* **shall**:

*R1.1. ~~Attest that Design their its~~ 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~~ Provide the **best** models and data ~~that are available at the time they are~~ provided for use in NYISO's Interconnection Studies **to** accurately simulate the performance of ~~their its~~ compliant IBR plant per R1.1.*

R2. Each Large IBR Generating Facility Developer subject to the NYISO's Interconnection Studies process shall:



**ACE NY**  
ALLIANCE FOR CLEAN ENERGY NEW YORK, INC.

*R2.1. ~~Attest that Design their its~~ 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 Provide the best~~ models and data ~~that are available at the time they are provided for use in NYISO's~~ Interconnection Studies ~~to~~ accurately simulate the performance of ~~their its~~ compliant IBR plant per R2.1.*

ACE NY appreciates the fact that the NYSRC has made revisions from the original proposal, and has limited the scope of how PRR 151 will be applied during the interconnection process. As ACE NY has previously explained, currently many IBR resource control designs are under development by the original equipment manufacturers (OEMs). As such, they do not yet have models that reflect as-built, commercially available facilities.

The changes offered herein are intended to recognize that a developer can only provide the best model available at the time of its submission. For example, IEEE 2800-compliant equipment models are not currently available from OEMs. Yet, per the Cluster Study rules under NYISO development, models must be submitted with an application. If the models must be provided on a preliminary basis at the time of the Interconnection Request to accommodate these and other relevant circumstances, developers should be allowed to subsequently augment their submission with an improved or otherwise updated OEM model, and it should not be a requirement that developers submit a new interconnection request because of this updated model. This will allow for, among other things, developers to meet Application Window deadlines while providing the OEM's additional time to build out models in the future.

### **Regarding the PRR 151: Procedure Document posted 11/1/23.**

#### **3. Establish Technology-Based Exemption Provisions**

##### Clause 1.4 – General Remarks and Limitations

Some technologies used by IBR developers may not be able to demonstrate conformance with IEEE 2800 due to their nature. For example, as of the time of standards development, it was unclear if Grid Forming (GFM) technologies could comply with these standards. The standard itself recognizes this. (See IEEE 1.4 General Remarks and Limitations.) Therefore, ACENY recommends that the NYSRC amend PRR 151 to clearly establish technology-based exemption provisions. This will allow IBR developers who incorporate new technologies, such as synchronous condensers, to qualify for an exemption from IEEE 2800 for good cause. Hence, a good cause exemption would allow deployment of new technologies, like GFM BESS, that are deemed beneficial to grid operations.

#### 4. Reflect the Requirements of IEEE 2800 in Clause 5.2.2.

Clause 5.2.2 – Voltage Control (dynamic performance) should be revised as follows:

*“The voltage control small-signal dynamic performance specified in Table 5 of the Standard shall be applicable when the system short-circuit strength at the RPA is the minimum short-circuit strength identified in cases provided by the NYISO for a minimum feasible generation scenario and NYSRC Reliability Rules, Table B-1, Category I, Item 2 contingencies (Opening of elements without fault) local to the POI. The maximum step response time for this condition shall be ~~less than 10 seconds~~ consistent with, and as specified in, Table 5 of IEEE Standard 2800-2022.”*

The 10 second response time specified in the Procedure Document is more stringent than that defined in IEEE 2800. IEEE 2800 was expressly designed to reflect the need for longer ranges of possible response times to account for different technologies. That same need must be reflected in the final reliability rule for it to be viable. ACE NY thus requests that NYSRC reflect the requirements of IEEE 2800.

#### 5. Delete Statement in Clause 6.1.1 Concerning NYISO Discretion

In Clause 6.1.1 – PFR Capability (supply of primary frequency response) – the final sentence should be struck, which reads.

*“In operation, selection of whether the underfrequency response or the power curtailment limits have priority shall be at the discretion of the NYISO System Operator.”*

Each IBR will be equipped with automatic primary frequency response (PFR), which will increase power from a curtailed generator to resolve the underfrequency event. It is not feasible for NYISO operators to notify each affected unit at the time of an underfrequency event to indicate whether it should increase operation above its curtailment level. With automatic PFR in operation at all times, it can automatically adjust unit output so that, during an underfrequency event, the curtailed signal is overridden, and the plant is allowed to respond.

While the system operator may seek to maintain system security through curtailment, overriding PFR in favor of curtailment may ultimately be counterproductive. PFR may, in fact, be favorable under system duress or avoid system duress.

#### 6. Limits NYISO Discretion in Clause 7.2.2.3.2

In Clause 7.2.2.3.2 – Low and High-Voltage Ride-Through Capability (reactive power priority in mandatory operation range), the following sentence should be struck:



*“The relationships between voltage deviation at the POCs of IBR units and the reactive components of current from these units shall be determined by NYISO based on interconnection studies with consideration of the characteristics of the IBR units.”*

ACE NY is concerned that NYISO may dictate a required relationship between reactive current and voltage deviation that is not available from certain vendors, making the requirement vendor biased. For example, some vendors have a control strategy that incorporates a proportional relationship between reactive current injection during a fault and the size of the voltage dip, while others use a proportional integral (PI) controller. Clearly, the exact nature of the response of a proportional only control and a PI control are different. However, it is well recognized given the numerous examples available in the industry that both controls can be made to work in an application with proper tuning and engineering. If NYISO becomes too prescriptive in its exact requirement of the relationship of reactive current to voltage deviation, it may preclude the use of *e.g.*, PI versus proportional control and thus become biased towards one vendor versus another. Given supply chain considerations and other factors delaying construction, arbitrarily limiting available vendors at this stage will only unnecessarily hamper the State’s ability to meet its CLCPA mandates.

## **7. Provide flexibility in the range and duration specified in Clause 7.2.2.2.**

Clause 7.2.2.2 – Voltage Disturbances Within Continuous Operating Region (extended voltage imbalance) states:

*“Active power changes, due to voltage deviations for which all applicable voltages at the RPA remain within the continuous operating region shall not cause a change in active power greater, in per-unit of the ICR (or the ICAR for energy storage in the charging mode), **than twice the magnitude** of abrupt voltage change, in per-unit of the nominal voltage. The active power output shall return to within  $\pm 0.05$  p.u. of the lesser of the pre-disturbance active power and the available active power, on the base of the ICR or ICAR, as applicable, within **one second of the disturbance**.”* (highlights added)

During voltage deviations for which all applicable voltages at the reference point of applicability (RPA) remain within the continuous operating region, an IBR plant shall continue to inject pre-disturbance active power or the available active power if such is less than pre-disturbance active power. Active power deviation caused by voltage deviation shall be returned to pre-disturbance or available active power within 1 – 10 seconds.

If the RPA voltage stays within the continuous operating range, it is imperative that an IBR plant inject rated active power or available active power if such is less than rated active power. IBR units should have a design margin to compensate for reduced voltage by means of increasing the



active component of current while still fulfilling Clause 5.1 of IEEE 2800. Moreover, the amount of active power deviation that is acceptable due to a drop in RPA voltage within the continuous operating range depends on system strength, pre-disturbance operating conditions, and other factors. Limiting such a drop to “twice the magnitude of voltage deviation” is too prescriptive. Finally, the duration for active power delivery to return to pre-disturbance or available active power within one second could be too restrictive and ultimately counterproductive in a weak grid. ACE NY asserts that a range is highly desirable and exact duration can be mutually agreed upon based on study outcome.

The Alliance for Clean Energy New York, on behalf of our member companies that have contributed to these comments, appreciates the opportunity to comment on this revised proposed reliability rule 151. We look forward to continuing dialog on these issues.

Sincerely,

Reid Wagner  
Clean Energy Markets Analyst  
Alliance for Clean Energy New York (ACE NY)