

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Reliability Standards for Frequency and)	
Voltage Protection Settings and Ride-Through)	Docket No. RM25-3-000
Requirements For Inverter Based Resources)	

**COMMENTS OF
NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY**

I. INTRODUCTION

On November 4, 2024, the North American Electric Reliability Corporation (NERC) submitted a petition seeking approval of, among other things, proposed Reliability Standard PRC-029-1, Frequency and Voltage Ride-through Requirements for Inverter-based Generating Resources; proposed Reliability Standard PRC-024-4, Frequency and Voltage Protection Settings for Synchronous Generators, Type 1 and 2 Wind Plants, and Synchronous Condensers; and the proposed definition of the term “Ride-through” for inclusion in the Glossary of Terms used in NERC Reliability Standards¹. On December 19, 2024, the Federal Energy Regulatory Commission (FERC) issued a Notice of Proposed Rulemaking (NOPR) proposing to approve the proposed Reliability Standards included in NERC’s petition and seeking comments on all aspects of the proposed approval thereof². FERC expressed particular interest in comments regarding the adequacy of NERC’s proposed exemption provision in Requirement R4 of proposed Reliability

¹ North American Electric Reliability Corporation, *Petition of the North American Electric Reliability Corporation for Approval of Proposed Reliability Standard(s) PRC-029-1 and PRC-024-4*, submitted Nov. 4, 2024 (Petition).

² Federal Energy Regulatory Commission, *Reliability Standards for Frequency and Voltage Protection Settings and Ride-Through for Inverter-Based Resources*, Notice of Proposed Rulemaking, Docket No. RM25-3-000, issued Dec. 19, 2024 (NOPR).

Standard PRC-029-1 “as it pertains to both projects and in service and those under contract, but not yet in-service as of the effective date of Reliability Standard PRC-029-1.”³ The New York State Energy Research and Development Authority (NYSERDA) respectfully submits the following comments regarding proposed Reliability Standard PRC-029-1.

II. COMMENTS

NYSERDA recognizes the importance of addressing reliability gaps related to inverter-based resources (IBR) as required by FERC in Order No. 901.⁴ However, addressing reliability gaps should also be balanced with the need for sufficient resources. To achieve these dual goals, NYSERDA proposes the following limited changes to the requirements included in proposed Reliability Standard PRC-029-1 to more appropriately balance the desire for IBR facilities in very advanced stages of development to meet those requirements with resource adequacy concerns and to recognize existing technological limitations.

A. The Proposed Exemption Provision in Requirement R4 Is Insufficient in Scope

Proposed Reliability Standard PRC-029-1 Requirement R4 allows for IBRs that are already in operation as of the effective date of the standard to seek an exemption to voltage and frequency Ride-through requirements if hardware replacements would be necessary to comply with those requirements⁵. In their Petition, NERC noted that such an exemption for “legacy” IBRs is necessary because, “...the anticipated difficulty of Generator Owners having to wholesale retrofit and redesign legacy facilities currently in operation would be unreasonable and

³ NOPR at ¶34.

⁴ FERC Order No. 901, *Reliability Standards to Address Inverter-Based Resources*, issued Oct. 19, 2023.

⁵ Petition at 36.

unduly burdensome, and it could lead to undesirable impacts on reliability.”⁶ In particular, NERC noted the negative resource adequacy impacts that could result from a proposed IBR Ride-through standard without appropriate exemptions.⁷

While NYSERDA agrees with NERC’s assessment of the need for a process for “legacy” IBR facilities to seek reasonable exemptions, the same rationale also applies to IBRs with both signed interconnection agreements and executed construction and procurement agreements. As such, the ability to seek exemptions should be expanded to IBRs that have signed interconnection agreements and have executed construction and procurement agreements as of the effective date of the standard. Such a modification of the exemption provision in Requirement R4 would recognize the fact that the interconnection studies together with the final engineering and design of IBR facilities are completed at least 2-3 years before those facilities are placed in-service. Restudy and redesign of such facilities would induce significant additional costs and delays to bring resources online, which could potentially lead to project cancellations and result in negative impacts to resource adequacy.

Both NERC and the New York Independent System Operator (NYISO) have highlighted the need for adequate new generation resources to address growth in electric demand and the retirement of aging generators^{8,9}. A limited expansion of the ability to seek exemptions, as described above, is consistent with NERC’s consideration of the balance between the need for ride-through requirements with resource adequacy concerns. Additionally, the requirements for resources to justify and document the need for exemptions under PRC-029-1 Requirement 4

⁶ *Id.* at 38.

⁷ *Ibid.*

⁸ North American Electric Reliability Corporation, *2024 Long-Term Reliability Assessment*, Dec. 2024, at 6.

⁹ New York Independent System Operator, *2024 Reliability Needs Assessment*, Nov. 19, 2024, at 10.

would remain unchanged, further limiting the number of resources to which exemptions could apply.

B. PRC-029-1 Should be Amended to Include Hardware Exemptions to Recognize Existing Technology Limitations

IBRs interconnected via high-voltage direct current (HVDC) transmission utilize hardware devices, such as DC choppers, to allow the IBR to ride through voltage excursions. Currently those hardware devices do not have the capability to meet the cumulative ten-second time period requirements included in clauses 7-9 of Attachment 1 to proposed Reliability Standard PRC-029-1. Those hardware limitations were recognized via exemptions in the *IEEE Standard for Interconnection and Interoperability of Inverter-Based Resources (IBRs) Interconnecting with Associated Transmission Electric Power Systems* (IEEE 2800-2022)¹⁰. The New York State Reliability Council (NYSRC) further recognized such hardware limitations in its application of IEEE 2800-2022, requiring the NYISO to define exceptions for consecutive voltage deviations ride-through capability that specifically include DC choppers and similar hardware devices¹¹.

While the modification to the expansion provision in Requirement R4 of PRC-029-1 that NYSEDA recommends above would address such hardware limitations for both “legacy” IBRs and those IBRs that have signed interconnection agreements and have executed construction and procurement agreements as of the effective date of the standard, it would not address the inability of future IBRs interconnected via HVDC transmission to meet the consecutive voltage deviation

¹⁰ IEEE Std 2800-2022, *IEEE Standard for Interconnection and Interoperability of Inverter-Based Resources (IBRs) Interconnecting with Associated Transmission Electric Power Systems*, published Apr. 22, 2022, at Clause 7.2.2.4.

¹¹ New York State Reliability Council, *NYSRC Procedure for Application of IEEE 2800-22 Standard for Large IBR Generating Facilities for the New York Control Area*, approved Feb. 9, 2024, at 5.

ride-through requirements of the standard until such time as new technology which can meet those requirements is available. To address that gap, NYSERDA believes that it would be prudent for FERC to direct NERC to include in PRC-029-1 specific hardware exemptions for DC choppers and similar hardware devices utilized by IBRs interconnecting via HVDC transmission similar to those included in IEEE 2800-2022 and the NYSRC's adoption of IEEE 2800-2022.

III. CONCLUSION

In order to be effective, reliability standards should be both feasible and appropriately balanced to address competing interests in a measured and reasoned approach. Providing a limited expansion of the exemptions for “legacy” IBRs to include those IBRs which have made substantial progress in their development, as demonstrated by having both signed interconnection agreements and executed construction and permit agreements as of the effective date of the new standard, would guard against resource adequacy concerns while also balancing the needs or ride-through requirements. Similarly, to address existing technology limitations, requiring the inclusion of hardware exemptions within PRC-029-1 similar to those included in IEEE 2800-2022 would provide the flexibility to ensure optimal system function consistent with industry standards while allowing time for development of the technology necessary to meet the new NERC standard. Inclusion of these proposed changes would improve the functionality of PRC-029-1 as a standard and further the public interest.

Dated: March 24, 2025
Albany, New York

/s/ **Peter Costello**

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CERTIFICATE OF SERVICE

I hereby certify that the foregoing Comments of the New York State Energy Research and Development Authority has been served upon each person designated on the official service list compiled by the Secretary in this proceeding in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure.

Dated: Albany, New York
March 24, 2025

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