

**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)	

**REPLY COMMENTS OF AMERICAN CLEAN POWER ASSOCIATION AND SOLAR
ENERGY INDUSTRIES ASSOCIATION**

I. INTRODUCTION

On November 4, 2024, the North American Electric Reliability Corporation (NERC) submitted to the Federal Energy Regulatory Commission (FERC) for its approval proposed Reliability Standard PRC-029-1, Frequency and Voltage Ride-through Requirements for Inverter-based Generating Resources (IBRs) (PRC-029-1), and proposed Reliability Standard PRC-024-4, Frequency and Voltage Protection Settings for Synchronous Generators, Type 1 and 2 Wind Plants, and Synchronous Condensers.¹ On December 19, 2024, the Commission issued a Notice of Proposed Rulemaking (NOPR) proposing to approve both Reliability Standards.² The Solar Energy Industries Association (SEIA) and American Clean Power Association (ACP) (jointly, the Clean Energy Associations) submitted comments on the NOPR on March 24, 2025.³ The Clean Energy Association submit the following reply to the comments of the California Independent System Operator Corporation, ISO New England Inc., Midcontinent Independent System Operator, Inc., PJM Interconnection, L.L.C., and the Southwest Power Pool, Inc.

¹ *North American Electric Reliability Council*, Petition of the North American Electric Reliability Corporation for Approval of Proposed Reliability Standards PRC-029 and PRC-024-4, RM25-3-000 (Nov. 4, 2024) (Petition).

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

³ *Reliability Standards for Frequency and Voltage Protection Settings and Ride-Through for Inverter-Based Resources*, Docket No. RM25-3-000, “Comments of Clean Energy Associations” (Mar. 24, 2025) (“Initial Comments”).

(collectively, the “Aligned ISOs/RTOs”).”⁴ The Clean Energy Associations appreciate the opportunity to submit this reply and request that the Commission accept this reply to enhance and clarify the record.⁵

II. REPLY COMMENTS

The Aligned ISOs/RTOs state that they “support the applicability of proposed Reliability Standard PRC-029-1 and reinforce support for a broadly-applicable standard that is *applied in a manner that limits exemptions to limited and rare circumstances*.”⁶ We seek to clarify that the exemptions available under Proposed PRC-029-1, including the changes proposed in our Initial Comments, will be limited and would only affect actual ride-through performance in rare circumstances.

The Proposed PRC-029-1 exemption is narrowly tailored. It is only available when an IBR “has known hardware limitations that prevent the IBR from meeting Ride-through criteria.”⁷ Moreover, such an exemption only applies to the limited portion of the frequency or voltage ride-through zone for which the pre-existing hardware was not designed to meet, and the IBR is still required to make any settings changes or software updates that would permit it to perform in the

⁴ *Reliability Standards for Frequency and Voltage Protection Settings and Ride-Through for Inverter-Based Resources*, Docket No. RM25-3-000, “Comments of the California Independent System Operator Corporation, ISO New England Inc., Midcontinent Independent System Operator, Inc., PJM Interconnection, L.L.C., and the Southwest Power Pool, Inc. in Support of Reliability Standards Establishing Performance Requirements For Inverter-Based Resources” (Mar. 24, 2025) (“RTO Comments”).

⁵ Although the Commission’s procedural rules generally do not allow for answers to answers, the Commission has accepted answers that facilitate the decisional process or aid in the explication of issues, and has explained that it will accept answers that “assist[] in our decision-making process.” *See, e.g., Midcontinent Indep. Sys. Operator, Inc.*, 181 FERC ¶ 61,066, at P 35 (2022) (accepting answers that “provided information that assisted us in our decision-making process”); *Wabash Valley Power Ass’n*, 181 FERC ¶ 61,282, at P 33 (2022) (same); *Sw. Power Pool, Inc.*, 162 FERC ¶ 61,215, at P 23 (2018) (same); *Midcontinent Indep. Sys. Operator, Inc.*, 162 FERC ¶ 61,176, at P 55 (2018) (same); *Consol. Edison Co. of N.Y., Inc.*, 161 FERC ¶ 61,302, at P 10 (2017) (same). The Clean Energy Associations request that the Commission accept this answer to clarify the record and support the Commission’s decisional process.

⁶ RTO Comments at 5.

⁷ Proposed PRC-029-1, R4.

ride-through zones prescribed in Proposed PRC-029-1. As illustrated in our Initial Comments, in most cases an exemption only marginally reduces the ride-through performance for events of an extreme magnitude and duration.⁸ Moreover, we explain that:

It is difficult, if not impossible, to imagine a scenario in which the marginally reduced ride-through performance due to the exemption would make a difference for electric grid reliability. Voltage and frequency deviations of this magnitude do not typically occur on the North American grid. None of the recent disturbance events NERC documented, and the Commission noted in Order No. 901, came anywhere near the magnitude or duration of performance required under PRC-029-1. Rather, the root cause of these events was a failure of some resources to perform to requirements far less stringent than those proposed under PRC-029-1, so the performance requirements of PRC-029-1 already address that problem for new resources. Even if such large deviations did occur, marginally expanded performance from existing IBRs would not materially change the outcome. For example, a large share of load and synchronous generators likely would have already tripped by the time a disturbance reached such an extreme duration and magnitude.⁹

Any reliability impact from such limited exemptions are far outweighed by the substantial improvements to frequency and voltage ride-through that will be achieved through implementation of PRC-029-1's performance requirements for both exempted and non-exempted IBRs across the system. As noted above, performance failures were the cause of past IBR ride-through problems, so the performance requirements of PRC-029-1 address that problem. As a result, PRC-029-1 will drive a major net improvement in reliability, and limited exemptions should have little to no impact on that benefit.

⁸ Initial Comments at 5-6.

⁹ *Id.* at 7.

A failure to create a workable exemption process would also do far greater harm to electric reliability than any impact of those limited exemptions, as we explained in our Initial Comments. Manufacturers of inverters admit that their legacy products cannot support the stringent requirements under current PRC-029-1.¹⁰ Without workable exemptions, a large quantity of operating resources will be forced to either prematurely retire or undergo expensive and time-consuming retrofits, removing many Gigawatts of generation in regions that are already facing acute resource adequacy concerns due to rapid load growth and continued supply chain and interconnection bottlenecks. As a result, the clarifications proposed in our Initial Comments regarding the evidence required to secure an exemption are critical for reliability, in addition to ensuring greater parity with the treatment of synchronous resources.¹¹

There is a similarly strong reliability imperative for the proposal in our Initial Comments to allow exemptions for resources in advanced development that will not be placed in service by the effective date of the PRC-029-1 standard, often due to permitting, interconnection, supply chain, and construction timeline factors beyond their control. The Clean Energy Associations and others requested in our Initial Comments that IBRs that have an executed interconnection agreement and an executed primary design, procurement, and/or construction agreement by the effective date of PRC-029-1 be eligible for limited exemptions, rather than the draft standard's proposal that exemptions only be available to resources placed in service by the effective date of the standard.¹² The New York Independent System Operator also made a similar proposal in its

¹⁰ Transcript of Technical Conference Day 1, Conference for North American Electric Reliability Corporation, at 155-159 (Sept. 4, 2024), https://www.nerc.com/pa/Stand/202002_Transmissionconnected_Resources_DL/Transcript%20-%20Day%201.pdf.

¹¹ Initial Comments, at 18-21.

¹² Initial Comments, at 12-13.

comments.¹³ This revision will also avoid harmful reliability impacts that would result from changing the rules in the middle of the game and forcing projects in late-stage development to redesign their projects and re-do interconnection studies, jeopardizing the timely completion of generators that are needed for resource adequacy in many regions. Our Initial Comments provide many concrete examples of projects that, without a revision to the standard, would face lengthy delays and excessive costs because they have already ordered equipment and signed interconnection agreements but will not be placed in service by the effective date of PRC-029-1.¹⁴

The Clean Energy Associations hope that this reply along with our Initial Comments demonstrate to the Aligned ISOs/RTO that exemptions under the Proposed PRC-029-1 are indeed limited to narrow and extreme portions of the ride-through zones that should not negatively affect reliability. Our proposed revisions support the goals of Order No. 901 by facilitating substantial improvements in ride-through performance at all IBRs.

¹³ *Reliability Standards for Frequency and Voltage Protection Settings and Ride-Through for Inverter-Based Resources*, Docket No. RM25-3-000, “Comments of the New York Independent System Operator on the Reliability Standards Establishing Performance Requirements for Inverter-Based Resources” (Mar. 24, 2025), at 2–3.

¹⁴ Initial Comments, at 14-17.

III. CONCLUSION

The Clean Energy Associations respectfully request that the Commission accept this reply, consider this input when acting on the NOPR, and issue an order directing NERC to make the modifications to Proposed PRC-029-1 described in our Initial Comments.

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CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in these proceedings.

Dated this 10th day of April, 2025.

/s/ Greg Giunta