

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

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

**Reply Comments of Invenergy Renewables LLC**

On December 19, 2024, the Federal Energy Regulatory Commission’s (“FERC” or “Commission”) issued a notice of proposed rulemaking (“NOPR”) in the captioned proceeding,<sup>1</sup> seeking comments on the November 4, 2024 petition of the North American Electric Reliability Corporation (“NERC”),<sup>2</sup> in which NERC proposed, among other things, reliability standard PRC-029-1 (Frequency and Voltage Ride-through Requirements for Inverter-based Generating Resources). Proposed PRC-029-1 is intended to “advance the reliability of the Bulk-Power System (“BPS”) by establishing voltage and frequency ride-through criteria for Generator Owners of Inverter-Based Resources (“IBR”) to continue to inject current and perform voltage support during a BPS disturbance and prohibit momentary cessation in the no-trip zone during disturbances.”<sup>3</sup> Invenergy Renewables LLC (“Invenergy”) and other interested parties filed comments on the NOPR on March 24, 2025.<sup>4</sup> Invenergy respectfully submits the following reply to the comments of the California Independent System Operator Corporation, ISO New England Inc., Midcontinent Independent System Operator, Inc.,

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<sup>1</sup>*Reliability Standards for Frequency and Voltage Protection Settings and Ride-Through for Inverter-Based Resources*, “Notice of Proposed Rulemaking,” 189 FERC ¶ 61,212 (2024).

<sup>2</sup>*North American Electric Reliability Corporation*, Docket No. RM25-3-000, “Petition of the North American Electric Reliability Corporation for Approval of Proposed Reliability Standards Proposed Reliability Standards PRC-029-1 and PRC-024-4” (Nov. 4, 2024) (“Petition”).

<sup>3</sup> *Id.* at 1.

<sup>4</sup>*Reliability Standards for Frequency and Voltage Protection Settings and Ride-Through for Inverter-Based Resources*, Docket No. RM25-3-000, “Comments of Invenergy Renewables LLC” (Mar. 24, 2025) (“Initial Comments”).

PJM Interconnection, L.L.C., and the Southwest Power Pool, Inc. (collectively, the “Aligned ISOs/RTOs”).”<sup>5</sup> Invenergy appreciates the opportunity to submit this reply and requests that the Commission accept this reply to enhance and clarify the record.<sup>6</sup>

## **I. 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.*”<sup>7</sup> Invenergy here seeks to clarify that the exemptions available under Proposed PRC-029-1, inclusive of our previously requested changes, will be limited and would only affect actual ride-through performance in rare circumstances.

The Proposed PRC-029-1 exemption is itself narrowly tailored. It is only available when an IBR “has known hardware limitations that prevent the IBR from meeting Ride-through criteria”<sup>8</sup> and 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.<sup>9</sup> A Generator Owner with an exemption, therefore, is still required to make any settings changes or software updates that would permit its IBR to perform in the ride-through zones prescribed in Proposed PRC-029-1.<sup>10</sup>

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<sup>5</sup>*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”).

<sup>6</sup>Invenergy requests leave to submit this reply and, to the extent applicable, waiver of Rule 213(a) of the Commission’s rules of practice and procedure. 18 C.F.R. § 385.213(a) (2024).

<sup>7</sup>RTO Comments at 5 (emphasis added).

<sup>8</sup>Proposed PRC-029-1, R4.

<sup>9</sup>Initial Comments at 7–8.

<sup>10</sup>See Proposed PRC-029-1, R2, R3, Attachments 1 & 2.

Invenergy demonstrated that the most common pre-existing equipment in use or expected to be in use by IBRs are designed to perform in wide swaths of the frequency and voltage ride through zones required in Proposed PRC-029-1.<sup>11</sup> As detailed in Invenergy's Initial Comments, exemptions would only be necessary in narrow and extreme bands of the zones where such pre-existing equipment was not originally designed to operate, thereby limiting the impact of the exemptions.<sup>12</sup> Such limited exemptions for pre-existing equipment would not materially impact reliability and would not undermine the substantial improvements to frequency and voltage ride-through performance that will be brought by implementation of PRC-029-1 at both exempted and non-exempted IBRs across the system.<sup>13</sup> Moreover, the potential levels of excursion affected by such tailored exemptions are well beyond the tripping events described in Order No. 901 and the Petition.<sup>14</sup> Thus, consistent with the Aligned ISOs/RTOs' goals, actual tripping of an exempted IBR within the ride-through zone should be expected to be very rare based on these past tripping events, as the exempted IBR would still be required not to trip within the range of frequency or voltage disturbances previously observed.<sup>15</sup>

Invenergy requested revision of Proposed PRC-029-1's exemption provision to allow IBRs in development that have an executed interconnection agreement and an executed primary design, procurement, and/or construction agreement to be eligible for the exemption.<sup>16</sup> The New York Independent System Operator, Inc. also made a similar

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<sup>11</sup>Initial Comments, Section II.B.

<sup>12</sup>Initial Comments, Section II.B.

<sup>13</sup>Initial Comments, Section II.E.

<sup>14</sup>Initial Comments, Section II.B.

<sup>15</sup>Initial Comments, Section II.E.

<sup>16</sup>Initial Comments, Section II.C.

proposal in its comments.<sup>17</sup> Even with this expansion of exemption eligibility, exemptions remain limited for the reasons discussed above. This revision will also avoid potential harmful reliability impacts because such late-stage development projects will be able to continue their development and construction activities without redesigning their projects and having associated restudies completed, thereby avoiding prohibitive time delays and unnecessary cost increases, and allowing such capacity, which is desperately needed for resource adequacy in certain regions, to achieve timely commercial operations.

Invenergy hopes that this reply along with Invenergy's 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 would only occur in rare circumstances. Invenergy's proposed revisions to the exemption support the goals of Order No. 901 by facilitating substantial improvements in ride-through performance at all IBRs, including those eligible to obtain limited exemptions respecting the capabilities of pre-existing equipment.

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<sup>17</sup>*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.

## II. CONCLUSION

For the foregoing reasons, Invenergy respectfully requests that the Commission accept this reply and issue an order directing NERC to make the modifications to Proposed PRC-029-1 described in Invenergy's Initial Comments.

Respectfully submitted,

/s/ Deborah A. Carpentier

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April 7, 2025

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### CERTIFICATE OF SERVICE

I hereby certify that the foregoing document has been served this day upon each person designated on the official service list compiled by the Secretary in this proceeding. Dated at Washington, DC this 7<sup>th</sup> day of April 2025.

/s/ Deborah A. Carpentier

Deborah A. Carpentier