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| NOGRR Number | [245](https://www.ercot.com/mktrules/issues/NOGRR245) | NOGRR Title | Inverter-Based Resource (IBR) Ride-Through Requirements |

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| Date | January 11, 2024 |

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| Market Segment | Not Applicable |

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| Comments |

Texas RE appreciates the opportunity to comment on ERCOT’s proposed Nodal Operating Guide Revision Request (NOGRR) 245 to ensure the reliable operation of Inverter-Based Resources (IBRs) on the ERCOT System, including ERCOT’s January 8, 2024 comments proposing revisions to the ROS-recommended version of NOGRR245.

In December 2022, the North American Electric Reliability Corporation (NERC) and Texas RE staff – with the support of ERCOT – prepared a comprehensive assessment of the widespread, unexpected reduction of over 1,700 MW of solar PhotoVoltaic Generation Resources (PVGRs) occurring simultaneously to a transmission substation fault on June 4, 2022. (2022 Odessa Disturbance: Joint NERC and Texas RE Staff Report) (“2022 Odessa Report”). The 2022 Odessa Disturbance Report followed on the heels of multiple other events in Texas and California involving IBR ride-through performance issues, including similar solar PhotoVoltaic (PV) events on the ERCOT System in May and June of 2021 and wind turbines events in the Texas Panhandle in May 2022.[[1]](#footnote-2) In the report, NERC and Texas RE noted that the “concurrent and unexpected tripping of synchronous generation in addition to the abnormal reduction of power from many solar PV facilities poses a **significant** risk to [Bulk Power System (BPS)] reliability. (2022 Odessa Report, at v (emphasis in original)). Among the ten key findings and recommendations detailed in the 2022 Odessa Report, NERC and Texas RE specifically highlighted the “**immediate need** for a performance-based, comprehensive generator ride-through standard” that provides “sufficient clarity and specificity to ensure all associated failure modes during ride-through events are accounted for in the standard.” (2022 Odessa Report, at ix (emphasis added)).

Following the December 2022 publication of the 2022 Odessa Report, ERCOT submitted NOGRR245 in January 2023 to, among other things, implement new frequency and voltage ride-through requirements based on the IEEE 2800-2022 standards along the lines of the recommendations from the 2022 Odessa Report. Over the past year, ERCOT, Market Participants, and inverter manufacturers have been engaged in fulsome discussions about the appropriate scope and application of the proposed generator ride-through requirements. Texas RE applauds these important efforts to balance the critical need for a comprehensive, performance-based generator ride-through standard with requirements that can be feasibly implemented.

As these discussions have been ongoing throughout 2023, several additional disturbance events and reports have continued to highlight the importance of a comprehensive ride-through standard to ensure generators remain connected to the BPS during system disturbances. In August 2023, NERC and the Western Electricity Coordinating Council (WECC) issued a joint report analyzing the widespread loss of solar PV resources in Southwestern Utah on the morning of April 10, 2023. (2023 Southwest Utah Disturbance: Joint NERC and WECC Staff Report) (“2023 Southwest Utah Report”). In the 2023 Southwest Utah Report, NERC and WECC reiterated the need for performance-based, comprehensive ride through standards to address the existing systemic risks associated with IBR performance issues. Echoing these themes, NERC and WECC released an additional joint report in September 2023 analyzing two separate systemic loss events involving battery energy storage systems (“BESS”) in the western interconnection in 2022 (2022 California Battery Energy Storage System Disturbances: Joint NERC and WECC Staff Report (“2022 BESS Report”). In the 2022 BESS Report, NERC and WECC specifically noted that industry should work to minimize the “proliferation of system risks in BESS resources as occurred in solar resources” related to facility to ride through normally cleared single-line-to-ground grid faults” among other recommendations. (2022 BESS Report, at iv).

As ERCOT and Market Participants have observed in the stakeholder process to date, the Federal Energy Regulatory Commission (FERC) has likewise issued an order directing NERC to develop new and modified reliability standards addressing reliability gaps associated with IBR performance, including performance requirements. (Order No. 901). Regarding IBR performance issues, FERC noted that NERC’s reliability standards should require registered IBRs to inject current and provide frequency support during system disturbances. (Order No. 901, at ¶ 190). While FERC acknowledged that an exemption for certain existing IBRs that are “unable to modify their coordinated protection and control settings to meet the [voltage ride-through] requirements without physical modifications” was appropriate, FERC directed NERC to consider those exemptions on an expedited timeframe to address the impacts of inverter-based performance issues on BPS reliability. (Order No. 901, at ¶ 193). In particular, FERC directed NERC to file revised IBR performance frequency and voltage ride-through standards by no later than November 4, 2024, reflecting the need to expeditiously resolve these reliability issues. (Order No. 901, at ¶ 56). In this manner, FERC has reinforced the need for urgent action encompassing all BPS facilities; ERCOT and its Market Participants are taking steps now, as is appropriate, to mitigate these risks.

Collectively, the multiple NERC and regional reports, as well as FERC’s IBR order highlight the ongoing, systemic, and evolving risks associated with inverter-based ride-through performance for the BPS in general and on the ERCOT System in particular. For this reason, Texas RE has repeatedly stressed that the inability of IBRs to reliably ride through faults and support the BPS during disturbances is one of, **if not the**, key reliability risk on the ERCOT System. Simply put, mitigating inverter-based performance issue risks is critically important to reliability. This is particularly vital on the ERCOT System given the increased penetration of IBRs, including BESS resources, here. Given their growing importance in the Generation Resource mix, ERCOT depends on these IBRs to effectively support BPS reliability, especially during contingency events. As such, Texas RE supports moving ahead with ERCOT’s proposal as reflected in its January 8, 2024 comments to address the reliability issues that exist on the ERCOT System today, even while the NERC Reliability Standards process addresses the various FERC directives on the national level.

While important debates about the scope of the new Nodal Operating Guide requirements may continue to occur, therefore, Texas RE emphasizes that the proposed ride-through requirements are ultimately designed to support reduction of systemic reliability risks that exist today in Texas. As such, Texas RE encourages the ERCOT stakeholders to move forward enhancing the reliability and security of the ERCOT System by adopting updated and improved IBR ride through standards along the lines of ERCOT’s January 8, 2024, proposal as soon as possible and begin mitigating these ongoing risks to the BPS reliability.

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| Revised Cover Page Language |

**None**

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| Revised Proposed Guide Language |

**None**

1. In addition to the 2022 Odessa Report, FERC specifically identified 12 events reporting an average of 1,000 MW of inverter-based resources entering momentary cessation or tripping in the aggregate. FERC Docket No. RM22-12-000, Order No. 901, at ¶ 26 (Oct. 19, 2023) (“Order No. 901”). [↑](#footnote-ref-2)