To: Notice\_Operations@lists.ercot.com

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Subject: M-C050124-01 Request to Implement Software, Firmware, Controls, Protection System and Parameter changes to improve Inverter-Based Resources (IBRs), Type 1 Wind-powered Generation Resources (WGRs) and Type 2 WGRs Ride-through performance

**NOTICE DATE:** May 1, 2024

**NOTICE TYPE:**  M-C050124-01 Operations

**SHORT DESCRIPTION:** Request to Implement Software, Firmware, Controls, Protection System and Parameter changes to improve Inverter-Based Resources (IBRs), Type 1 Wind-powered Generation Resources (WGRs) and Type 2 WGRs Ride-through performance

**INTENDED AUDIENCE:** Resource Entities with Inverted-Based Resources (IBRs) and non-IBR Wind-power Generation Resources (WGRs)

**DAYS AFFECTED:**August 1, 2024

**LONG DESCRIPTION:**Due to the current, critical reliability risk imposed by ride-through failures and ERCOT’s awareness from Original Equipment Manufacturers (OEMs) of available protection systems, software, firmware, controls, and other similar parameterization improvements to maximize frequency and voltage ride-through capability up to equipment capability, ERCOT requests all Resource Entities with Inverter-Based Resources (IBRs) or non-IBR Wind-powered Generation Resources (WGRs) implement all protection, software, firmware, controls, and other similar parameter improvements without delay.  Any changes should be made in accordance with the process approved in Planning Guide Revision Request (PGRR) 109, Dynamic Model Review Process Improvement for Inverter-Based Resource (IBR) Modification, effective May 1, 2024.

This request applies even if the additional ride-through capability exceeds current performance requirements.  However, any changes should not deviate from documented unique settings required by ERCOT or the Transmission Service Provider (TSP) without additional coordination.

Resource Entities and Interconnecting Entities (IEs) are encouraged to work with OEMs and any necessary engineering firms to identify and implement available solutions without delay.

**ADITIONAL INFORMATION:**The ERCOT System has experienced and continues to experience IBR and WGR ride-through failures and abnormal system responses.  In January 2023, ERCOT submitted Nodal Operating Guide Revision Request (NOGRR) 245, Inverter-Based Resource (IBR) Ride-Through Requirements, to address these current, critical reliability issues that have the potential to cause cascading or system-wide instability. Recently, on April 23, 2024, the ERCOT Board of Directors (Board) remanded NOGRR245 to the Technical Advisory Committee (TAC) for further consideration on key policy matters. However, through the NOGRR245 discussion stakeholders, including IBR and WGR owners and operators, agree software, firmware, controls, protection systems and other similar parameterization improvements that can materially improve and maximize the frequency and voltage ride-through capability of IBRs and WGRs should be implemented as soon as practicable.

PGRR 109 improves the dynamic model review process for IBRs that implement modifications that impact the dynamic response.  This new process, while not part of NOGRR245, is required for any IBR modifications that impact the dynamic response of the IBR.

**ACTION REQUIRED:** ERCOT requests that all Resource Entities with IBRs or WGRs report by August 1, 2024 their plans (including a schedule) for implementing protection system, software, firmware, parameter, and controls changes to maximize frequency ride-through and voltage ride-through capability up to equipment capability.  ERCOT will provide an additional Market Notice by no later than July 1, 2024 with additional instructions for submitting the plans.

This request is not intended to subject any Resource Entity to non-compliance for failure to implement ride-through capability in excess of current requirements or for failure to report their plans by August 1, 2024.  ERCOT will compile the responses and report the results at the August 20, 2024 Board meetings.

**CONTACT:** If you have any questions, please contact your ERCOT Account Manager. You may also call the general ERCOT Client Services phone number at (512) 248-3900 or contact ERCOT Client Services via email at ClientServices@ercot.com.

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