



Steady-State Voltage Performance Criteria for Geomagnetic Disturbance (GMD) Vulnerability Assessments

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Overview

- GMD events may result in increased reactive power absorption by transformers, loss of reactive power compensation devices and/or other transmission facilities, and damage to transformers
 - May cause voltage depression or collapse
- NERC reliability standard TPL-007-4, Transmission System Planned Performance for Geomagnetic Disturbance Events, requires responsible entities to have acceptable system steady-state voltage criteria for their systems during GMD events
- ERCOT Planning Guide Section 3.1.8 (3) requires the steady-state voltage performance criteria developed by ERCOT and TSPs to be approved by TAC

GMDVA Steady-State Voltage Performance Criteria Discussion Recap

- ERCOT worked with TSPs through PGDTF and RPG meetings to develop steady-state voltage performance criteria
- Based on preliminary GMDVA study results, it was recommended to use the same steady-state voltage performance criteria used in other planning studies following GMD events
- ERCOT presented the recommendation to RPG and PGDTF in 2020 and 2021

[PGDTF April 2020 Presentation](#)

[PGDTF May 2021 Presentation](#)

[PGDTF September 2021 Presentation](#)

[RPG July 2020 Presentation](#)

[RPG May 2021 Presentation](#)

[RPG October 2021 Presentation](#)

- No comments were received following those presentations

Proposed Steady-State Voltage Performance Criteria

- The steady-state voltage criteria outlined in Planning Guide Section 4.1.1.4, specifically the post contingency voltage performance criteria, will be used following the occurrence of the benchmark or supplemental GMD events
- The voltage deviation criteria outlined in Planning Guide Section 4.1.1.4 will be used following the occurrence of the benchmark or supplemental GMD events

Request for TAC Approval

- Planning Guide Section 3.1.8(3) requires that ERCOT and TSPs develop criteria for acceptable steady-state voltage performance during the benchmark and supplemental GMD events for approval by TAC
- ERCOT respectfully requests that TAC approve the recommended steady-state voltage performance criteria for benchmark and supplement GMD events