



## **Benchmark GMD Vulnerability Assessment Market Notice**

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Transmission Planning Assessment

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# Agenda

- Market Notice M-A062118-06
- TPL-007-2 R4
- TPL-007-2, Table 1: Steady State Planning GMD Event
- Expectations
- Categories

# Market Notice M-A062118-06

**NOTICE DATE:** March 20, 2019

**NOTICE TYPE:** M-A062118-06 Operations

**SHORT DESCRIPTION:** Change in submission date - Request for Resource Entities and Transmission Service Providers (TSPs) to provide to ERCOT a list of Geomagnetic Disturbance (GMD) event contingencies for the benchmark GMD event for use in the GMD vulnerability assessment

**INTENDED AUDIENCE:** Resource Entities and TSPs

**DAYS AFFECTED:** March 31 - October 1, 2019

**LONG DESCRIPTION:** This Market Notice is to provide an extension to the deadline date communicated in ERCOT's previous request sent on January 23, 2019. ERCOT requests that Resource Entities and TSPs provide a list of potential equipment removed from service as a result of Protection System operation or Misoperation due to harmonics that could result from the benchmark GMD event as described in "Table 1: Steady State Planning GMD Event" of North American Electric Reliability Corporation (NERC) Reliability Standard TPL-007-1, Transmission System Planned Performance for Geomagnetic Disturbance Events (GMD event contingencies).

**ACTION REQUIRED:** Resource Entities and TSPs are required to assess the impact of the benchmark GMD event on their equipment to develop the list of potential equipment removed from service during the benchmark GMD event. Send all responses via e-mail to [ClientServices@ercot.com](mailto:ClientServices@ercot.com) with "Benchmark GMD Event" in the subject line by October 1, 2019. Additionally, Resource Entities and TSPs with no potential equipment that may trip offline due to harmonics during the benchmark GMD event should so state in their email submission. **If a reply to ERCOT's original request has been made applying the additional information in this request, no further action is required.**

**ADDITIONAL INFORMATION:** On January 22, 2019, ERCOT partially implemented Planning Guide language associated with Planning Guide Revision Request (PGRR) 057, Responsibilities for Performing GMD Vulnerability Assessments. Specifically, paragraph (2) of Section 6.11, Process for Developing Geomagnetically-Induced Current (GIC) System Models, was unboxed. Remaining portions of PGRR057 will be implemented at a later date. PGRR057 aligns the Planning Guides with NERC Reliability Standard TPL-007-1, Transmission System Planned Performance for Geomagnetic Disturbance Events, by identifying responsibilities for performing studies needed to complete GMD vulnerability assessments.

In addition to Resource Entities and TSPs, this Notice is also issued to compliance contacts for all Generator Owners and Transmission Owners registered with NERC.

[NERC Geomagnetic Disturbance Planning Guide](#) may be used as a reference to develop the requested list of potential equipment. This guide can be found on NERC website.

Please use the [ERCOT Benchmark GMD Event Data Request](#) form on the ERCOT [Planning Geomagnetic Disturbance Task Force](#) (PGDTF) landing page for the submission. The form also includes descriptions of the requested information.

**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](mailto:ClientServices@ercot.com).

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## Market Notice M-A062118-06

- R4 (TPL-007-2):
  - Benchmark GMD vulnerability assessment shall be conducted at least once every 60 calendar months
  - This assessment shall use the models identified in R2 (TPL-007-2)
  - Study conducted based on benchmark GMD event in Attachment 1
  - System shall meet the steady state performance requirements in Table 1

# TPL-007-2 Table 1

**Table 1: Steady State Planning GMD Event**

**Steady State:**

- a. Voltage collapse, Cascading and uncontrolled islanding shall not occur.
- b. Generation loss is acceptable as a consequence of the steady state planning GMD events.
- c. Planned System adjustments such as Transmission configuration changes and re-dispatch of generation are allowed if such adjustments are executable within the time duration applicable to the Facility Ratings.

Category	Initial Condition	Event	Interruption of Firm Transmission Service Allowed	Load Loss Allowed
<b>Benchmark GMD Event - GMD Event with Outages</b>	1. System as may be postured in response to space weather information <sup>1</sup> , and then 2. GMD event <sup>2</sup>	Reactive Power compensation devices and other Transmission Facilities removed as a result of Protection System operation or Misoperation due to harmonics during the GMD event	Yes <sup>3</sup>	Yes <sup>3</sup>
<b>Supplemental GMD Event - GMD Event with Outages</b>	1. System as may be postured in response to space weather information <sup>1</sup> , and then 2. GMD event <sup>2</sup>	Reactive Power compensation devices and other Transmission Facilities removed as a result of Protection System operation or Misoperation due to harmonics during the GMD event	Yes	Yes

**Table 1: Steady State Performance Footnotes**

- 1. The System condition for GMD planning may include adjustments to posture the System that are executable in response to space weather information.
- 2. The GMD conditions for the benchmark and supplemental planning events are described in Attachment 1.
- 3. Load loss as a result of manual or automatic Load shedding (e.g., UVLS) and/or curtailment of Firm Transmission Service may be used to meet BES performance requirements during studied GMD conditions. The likelihood and magnitude of Load loss or curtailment of Firm Transmission Service should be minimized.

# Expectations

- List of outages of equipment that may be susceptible to harmonics during the GMD event.
  - Reactive Power compensation devices and other Transmission Facilities
    - should include generator, capacitor bank, SVC and protective relays
  - Removed as a result of Protection System operation or Misoperation

# Outage Categories

- Category A: High probability GMD event caused outages
  - Outages may be studied simultaneously in the GMD Vulnerability Assessment
- Category B: Lower probability GMD event caused outages
  - Outages may be studied one at a time in the GMD vulnerability assessment



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