

Notice to Market Participants – Completion of Ontario GIC assessment for TPL-007-4, R4 & R8

July 16, 2024

The IESO has recently completed a report to fulfill its obligations under requirements R4 and R8 of NERC standard TPL-007-4, Transmission System Planned Performance for Geomagnetic Disturbance (GMD) events. According to the implementation plan of TPL-007-4 in Ontario, the compliance date for these requirements is October 1, 2023.

Requirements R4 and R8 mandate that the IESO shall complete a benchmark and supplemental GMD Vulnerability Assessment of the Near-Term Transmission Planning Horizon at least once every 60 calendar months and document the assumptions as well as summarize results of the steady-state analysis, as outlined in the TPL-007-4 standard.

The IESO has fulfilled these requirements and identified the maximum reactive power losses (MVAR) from GIC currents for the worst case geoelectric field orientation for the benchmark and supplemental GMD events, as outlined in the report. The planning area within the IESO jurisdiction has been analyzed in detail and modelled in accordance with the Canadian Variance of TPL-007-4, Attachment 1. This was done using data collected by Natural Resources Canada (NRCan) to identify the earth resistivity and the peak electric field strength.

The IESO has identified through the benchmark and supplemental analysis that there are no circuits and transformers which are not within their long-term emergency (LTE) rating post-contingency (i.e., due to the GIC event). The IESO has also identified that all buses are within the acceptable voltage ranges post-contingency, as outlined in the report. There was no N-0 (also known as “all-lines-in”) thermal or voltage violations under peak and off-peak load conditions in Ontario for both Benchmark and Supplemental GMD events. In addition, there was no N-1 thermal or voltage violations under peak and off-peak load conditions in Ontario for both Benchmark and Supplemental GMD events.