FORTIS ALBERTA

November 19, 2025

DER Bulletin 2025-003: Electromagnetic Transient Models

FortisAlberta is experiencing high levels of Distributed Energy Resource (DER) penetration on its network. As a result, the need to model the system in greater detail and employ more advanced techniques to manage it safely and reliably has become more pressing.

Key Changes Rationale

Current Practice:

For sites where Electromagnetic Transient (EMT) models are required, current expectations for inverter-based resources dictate that unit-level Original Equipment Manufacturer (OEM) models of the specific inverter be provided. However, composite DER sites often employ power plant controllers that influence overall plant behavior. This can result in system-level studies using unit-level models that are inaccurate, potentially leading to unnecessary mitigation requirements. While EMT models have so far only been requested for inverter-based resources, FortisAlberta is extending engagement to DER proponents utilizing synchronous and induction-type generators as well.

New Proposed Requirements:

FortisAlberta is considering a modified version of AESO Rule 503.21, supplemented by Information Document #2010-001R, to guide EMT model requirements. These changes will be reflected in FortisAlberta's DER interconnection standards. EMT models shall be provided in both PSCAD/EMTDC and EMTP-RV formats.

Details:

- DERs with a nameplate rating ≥ 500 kVA must provide a validated plant-level model
- DERs with a nameplate rating < 500 kVA must provide a validated plant-level model if designated as a high generation/load ratio site under FortisAlberta's DER-02B. This designation is at FortisAlberta's sole discretion
- DERs with a nameplate rating < 500 kVA but > 150 kW / 167 kVA, and not designated as high generation/load ratio, must provide either a unit-level OEM model or an aggregated model

Threshold References:

- The 500 kVA threshold is based on IEEE Std 1547-2018 and IEEE Std 1547.2-2023, which delineate small-scale vs. large-scale DER

- The 150 kW / 167 kVA threshold reflects the boundary between large and small microgeneration

Implications for DER Proponents

Proponents will be required to procure and submit validated EMT models in the specified formats as part of the technical interconnection requirements. Submission of these models is a prerequisite for completing the interconnection process. Projects that do not meet this requirement will not be able to proceed to connection.

Proposed Roll-Out Plan

The rollout of updated EMT modeling requirements is planned for Q1/Q2 2026, in response to high DER saturation challenges.

Action Required

Please submit written feedback by close of business on **December 19, 2025**, to **Generation@fortisalberta.com.**
Use the subject line:
Feedback for FAI Control Mode and EMT Consultation Nov 2025 from [Affiliation]