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| SCR Number | [831](https://www.ercot.com/mktrules/issues/SCR831) | SCR Title | Short Circuit Model Integration |
| Date of Decision | | February 12, 2025 | |
| Action | | Tabled | |
| Timeline | | Normal | |
| Proposed Effective Date | | To be determined | |
| Priority and Rank Assigned | | To be determined | |
| Supporting Protocol or Guide Sections/Related Documents | | Planning Guide Section 6.3, Process for Developing Short Circuit Cases | |
| System Change Description | | This System Change Request (SCR) modifies the Network Model Management System (NMMS), ODMS, Topology Processor, and Modeling on Demand system to incorporate short circuit modeling data for maintaining short circuit models built by the System Protection Working Group (SPWG). | |
| Reason for Revision | | [Strategic Plan](https://www.ercot.com/files/docs/2023/08/25/ERCOT-Strategic-Plan-2024-2028.pdf) Objective 1 – Be an industry leader for grid reliability and resilience  [Strategic Plan](https://www.ercot.com/files/docs/2023/08/25/ERCOT-Strategic-Plan-2024-2028.pdf) Objective 2 - Enhance the ERCOT region’s economic competitiveness with respect to trends in wholesale power rates and retail electricity prices to consumers  [Strategic Plan](https://www.ercot.com/files/docs/2023/08/25/ERCOT-Strategic-Plan-2024-2028.pdf) Objective 3 - Advance ERCOT, Inc. as an independent leading industry expert and an employer of choice by fostering innovation, investing in our people, and emphasizing the importance of our mission  General system and/or process improvement(s)  Regulatory requirements  ERCOT Board/PUCT Directive  *(please select ONLY ONE – if more than one apply, please select the ONE that is most relevant)* | |
| Justification of Reason for Revision and Market Impacts | | This modification would support the development and maintenance of short circuit models by aligning the models with operational data every case build and would reduce the workload across Transmission Service Providers (TSPs) and ERCOT who must engage in dual modeling across multiple cases. It will also improve the quality of the short circuit models by ensuring data is consistent across operations, steady state planning, and short circuit planning models. | |
| PRS Decision | | On 2/12/25, PRS voted unanimously to table SCR831 and refer the issue to ROS. All Market Segments participated in the vote. | |
| Summary of PRS Discussion | | On 2/12/25, the sponsor provided an overview of SCR831. | |

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| Market Segment | Not applicable |

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| **Comments Received** | | | |
| **Comment Author** | | **Comment Summary** | |
| None | |  | |
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| **Market Rules Notes** | | | |

None

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| Proposed System Change |

**Issue:**

Each year ERCOT produces six short circuit transmission models representing the current year to five years in the future as required by Planning Guide Section 6.3. These cases are currently built by ERCOT and the System Protection Working Group (SPWG) using an entirely manual process that is not synchronized with operational changes in the Network Model Management System (NMMS). This means changes made in NMMS are not reflected in the short circuit models unless changes are manually made and submitted by the short circuit modeler. Additionally, as both ERCOT and TSPs must model planned changes in both the steady state and short circuit planning cases when new projects are added into Model on Demand (MOD), the changes do not flow to the short circuit cases. This results in both ERCOT and TSPs performing duplicate work to maintain operational and planned changes in the operations, steady state planning, and short circuit planning models. Currently change files to update the short circuit models by adding future transmission projects are exchanged via email between ERCOT and TSPs, which are then manually applied to cases one by one. This is a very intensive manual effort without the access control, security, data tracking, and automation afforded by MOD.

**Resolution:**

The requested change integrates short circuit model data into both the operational and planning modeling systems, NMMS and MOD, respectively.

1. Update the NMMS to allow short circuit data to be included and used for short circuit model development and maintenance.
2. Update the output of ERCOT Topology Processor to include short circuit data in the RAW file output and to generate sequence files.
3. Update MOD to add all necessary short circuit attributes to MOD and implement workflow improvements to support multiple types of models in a single system.
4. Data elements to be included (not an exclusive list):
   1. Zero Sequence R, X, & B;
   2. Mutual Coupling;
   3. Transformer Connection Codes;
   4. Generator sequence data (saturated values for transient, subtransient, synchronous, negative R&X, zero R&X, and grounding); and
   5. All other data currently included in short circuit models.