

Project 2022-04 Electromagnetic Transient (EMT) Modeling

Ali Goharrizi

Planning Engineer

Operations stability analysis

Background

- The bulk power system (BPS) in North America is undergoing a rapid transformation towards high penetrations of inverter-based resources (IBR)
- The growth of IBR has pushed conventional tools to their limits (PLL, harmonics and resonances)
- Transmission Planners (TPs) and Planning Coordinators (PCs) are using electromagnetic transient (EMT) modeling and simulation
- TPs and PCs are concerned about :
 - Lack of accurate modeling
 - Need to perform EMT studies

Purpose

- Support and accelerate industry adoption of EMT modeling and simulation
- Provide guidance and useful references to TPs and PCs :
 - Verify and validate accurate models and essential tools
 - Conduct EMT modeling and simulation

Standard(s) Affected

FAC-002, MOD-032, and TPL-001

SAR Drafting Team

- Two days meeting for SAR drafting team:
 - April 4, 2023 | 9:00 a.m. – 4:00 p.m. Eastern
 - April 5, 2023 | 9:00 a.m. – 4:00 p.m. Eastern
- SAR DT voted to response to SAR comments
- Verification/validation language check throughout redlined SAR – SAR DT task
- Hyperlink IRPS supporting paper in redlined SAR
- Schedule team meetings for April 17th, May 1st, and May 15th – all are two hour meetings for 3pm EST.

Mon May 15, 2023 2pm – 4pm (CDT)

- Complete most parts of the redlined SAR and wait for the team to comment and edit
- The SAR DT has a deadline of May 22, 2023 to submit any final edits to the SAR
- Once all team members have submitted their vote and passed, the team will submit the redlined and clean versions of the SAR to the Standards Committee (SC) along with a one-pager
- In order for the SAR to make it on the June SC agenda, voting would have to be finalized around June 1, 2023

NERC EMTTF Working Session

- TF Purpose, Goals
- Work items
 - Effective adopt/implement EMT simulations in interconnection and planning studies
- Volunteer leads for each of the work item