MOD-032 Review

Jonathan Thompson
Planning Committee
March 9, 2017
• Purpose NERC MOD-032-1
  – To establish consistent modeling data requirements and reporting procedures for development of planning horizon cases necessary to support analysis of the reliability of the interconnected transmission system
• 2016 was first year Transmission Owners and Generation Owners had to submit data to PJM under MOD-032 requirement 2
  – PJM opened Gen Model portal for Generation Owner submission
  – PJM used Model On Demand to build gather and build load flow cases
  – 2016 process a success
MOD-032 schedule for Transmission Owners

<table>
<thead>
<tr>
<th>Date</th>
<th>Action Item</th>
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<tbody>
<tr>
<td>February 23, 2017</td>
<td>MMWG Kick-off Meeting / Modeling Working Group</td>
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<tr>
<td>March 17, 2017</td>
<td>Transmission Owners to submit project revisions in Model-on-Demand</td>
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<td>March 20, 2017</td>
<td>PJM to post 1, 2, &amp; 5 year summer cases for topology updates</td>
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<td>March 31, 2017</td>
<td>Transmission Owners to submit topology updates to the 1, 2 &amp; 5 year summer cases in Model-on-Demand</td>
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<td>April 17, 2017</td>
<td>PJM to post all 12 MMWG case definitions and tie lines for review</td>
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<td>April 27, 2017</td>
<td>MMWG Check-in Call 9 - 11:30 AM EST</td>
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<td>May 12, 2017</td>
<td>Transmission Owners to submit updates to case definitions and tie lines</td>
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<td>May 15, 2017</td>
<td>Pull 12 cases from Model-on-Demand and begin:</td>
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<td>o Set Load</td>
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<td>o Solve cases</td>
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<td>o Dispatch</td>
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<td>o Incorporate tie lines and interchange</td>
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<tr>
<td>June 30, 2017</td>
<td>Data Coordinators submit Power Flow Data to Powertech (N-1 completed)</td>
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Gen Model for 2017

• Gen Model is the tool used by GOs to get PJM gen data
• 2017 Activity
  • Open April 1 – May 31
  • Form will be preloaded with 2016 data making it quick to submit generators with unchanged data and easy to update any changed parameters
  • PJM will ask for data to aid TPL-007-1 but data will not be required under MOD-032
  • Some GO’s pointed out some parameters had too strict of limits on data fields, PJM has loosened parameters
• PJM staff has reviewed and updated “PJM MOD-032 Steady State, Dynamics, and Short Circuit Modeling Data Requirements and Reporting Procedures Document”
• Most updates were to clarify questions from 2016
Document updates

- Section 1.5.2 (Generation Owner expectations)
  - Generation Owners can submit dynamics data in a variety of formats: Word or excel document, pdf, dyr, etc.
  - All Generation Owners with capacity in PJM markets or with machine larger than 20 MW
  - Queue projects coming online in 2017 need to submit in 2017 submission
- Section 1.5.3 (Transmission Owner expectations)
  - TOs are not expected to coordinate interchange
- Section 2
  - Updated required cases to reflect latest MMWG requirements
- Section 3.1 (Annual Schedules)
  - Updated schedules to reflect latest requests
• Section 3.2.1 (Ties)
  – Updated that PJM will coordinate both internally between its TOs and externally between PCs
• Section 3.2.2 (Interchange)
  – Removed TOs from coordination. Coordination is between PCs
• Section 4.3 (Date Checks)
  – Updated MMWG website to point to MMWG Manual
• Section 4.4 (Model On Demand)
  – Updated Model On Demand version to 9.1.2.5
• Section 5 (Generation Owners Data Requirements and Guidelines)
  – Updated to include Gen Model User Guide URL
• Section 6 (Dynamics Data Requirements and Guidelines)
  – Updated to allow more leeway in accepted dynamics files
  – Asking for data from units with CIRs, 20 MW+
• Section 6.2.2 (Transmission Owner Owned Equipment)
  – Updated to include Merchant Transmission owned projects
• Section 6.3 (Accepted Generator Models)
  – All standard PSS/e models will be accepted with the exception of legacy models listed in 6.4
• Section 6.4 (Converting Legacy Models)
  – PJM requires legacy models to be converted prior to submission
• Sections 6.5, 6.6, and 6.7
  – Updated to point to latest MMWG manual, which PJM will draw its dynamics data checks, dynamics initialization and checking procedure, and case acceptance criteria
• Appendix 2 (Generator Owner Data Sheet Requirements)
  – Moved Prime Mover and Energy Source from General to sync gen/Wind/Inverter tabs
  – Cleaned up units
  – Added GMD specific parameters (Not Required under MOD-032)
PJM has received notice from ERAG that PJM will have to provide short circuit data and data dictionary for use in verification of data with focus on equipment along borders.

PJM will make available 2 year short circuit case developed for 2017 RTEP year.

Anticipated future requests to members are not expected.