NERC TPL-001-4 – Transmission System Planning
Performance Requirements

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10/17/2014
• FERC final rule on October 17, 2013 approved NERC’s TPL-001-4

• Enforcement dates:
  – Requirements R1 and R7 – January 1, 2015
  – Requirements R2 through R6 and R8 – January 1, 2016
TPL-001-4 Implementation Work

• June 2012
  – TPL-001-4 discussed at the PJM PC as a future issue that will impact PJM Planning

• July 2012 – January 2013
  – PJM PC began work to draft PJM Manual 14B
  – PJM Region Transmission Planning to comply with TPL-001-4
  – PJM PC forms a “M14B/TPL” group to develop PJM implementation of specific areas of the new TPL standard related to system stability

• February 2013
  – PJM PC endorses Manual 14B changes required to implement TPL-001-4

• October 17, 2013
  – FERC final rule approves TPL-001-4

• October 9, 2014 PC
  – Review M14B changes to support TPL-001-4 R1 and R7 in advance of enforcement date: 1/1/2015

• Future MRC
  – First read of M14B changes to support TPL-001-4
  – Request MRC approval of M14B
<table>
<thead>
<tr>
<th>Requirement</th>
<th>Abbreviated Description</th>
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<tbody>
<tr>
<td>R1</td>
<td>Maintain System models</td>
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<tr>
<td>R2</td>
<td>Prepare an annual assessment (see Table 1)</td>
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<td>R3</td>
<td>Study the near-term and longer-term</td>
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<td>R4</td>
<td>Perform the stability criteria in Table 1</td>
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<td>R5</td>
<td>Criteria - Voltage, including transient voltage response</td>
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<td>R6</td>
<td>Criteria - cascading, voltage instability, uncontrolled islanding</td>
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<td>R7</td>
<td>The TPs and PCs shall determine study responsibility for the assessment</td>
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<td>R8</td>
<td>Distribute results of annual assessment</td>
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Overall Technical Requirements

- Event simulation (Table 1)
  - Thermal, voltage limit, voltage stability
- Short Circuit analysis
- Dynamic Simulation
  - Dynamic load modeling
  - Transient voltage recovery
• R1. Each Transmission Planner and Planning Coordinator shall maintain System models within its respective area for performing the studies needed to complete its Planning Assessment. The models shall use data consistent with that provided in accordance with the MOD-010 and MOD-012 standards, supplemented by other sources as needed, including items represented in the Corrective Action Plan, and shall represent projected System conditions. This establishes Category P0 as the normal System condition in Table 1.
  – 1.1. System models shall represent:
  – 1.1.1. Existing Facilities
  – 1.1.2. Known outage(s) of generation or Transmission Facility(ies) with a duration of at least six months.
  – 1.1.3. New planned Facilities and changes to existing Facilities
  – 1.1.4. Real and reactive Load forecasts
  – 1.1.5. Known commitments for Firm Transmission Service and Interchange
  – 1.1.6. Resources (supply or demand side) required for Load

• R7. Each Planning Coordinator, in conjunction with each of its Transmission Planners, shall determine and identify each entity’s individual and joint responsibilities for performing the required studies for the Planning Assessment.
• PJM already complies with the majority of the R1 and R7 requirements, one addition is needed for

• R1.1.2:

**Modeling of Outages**

Known outages of Generation or Transmission Facilities with a duration of at least six months will be included under those system peak or off-peak conditions in the appropriate base case model. PJM may not model these outages in every case that is used for RTEP analysis, but will select appropriate scenarios to assess these outages. Additionally PJM will analyze a subset of maintenance outages submitted through eDart under those system peak or off-peak conditions.
Next Steps

• Request PC endorsement of M14B language
  – November 2014
• Request MRC approval of M14B language
  – November 2014

• Develop PJM implementation timeline
Questions, Comments, Suggestions:

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