Transmission Substation Equipment in FERC Order 1000

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August 11, 2016
Transmission Substation Equipment Upgrades

- Historical look at the RTEP

- Typical solution to an Transmission Substation Equipment overload is to upgrade it, replace it in kind with higher rated equipment or add additional substation equipment to achieve required system performance

- Few Transmission Substation Equipment driven baseline projects have resulted in Greenfield Projects. If the analysis shows that a greenfield project is possible, PJM would Open a window.

- Otherwise and by default, a typical Transmission Substation Equipment violation would be excluded from the FERC Order 1000 Window Process
Next Steps

- **Transmission Substation Equipment**
  - Recommend that Transmission Substation Equipment issues that can be solved by Transmission Owner Upgrades be excluded from FERC Order 1000 competitive window process.

- **New PJM Operating Agreement section**
  - See associated OA language that is posted with today’s materials.
  - Section 1.5.8(o) - Reliability Violations on Transmission Substation Equipment.
Timeline

- April 2016
  - Conceptual discussion at PC and MRC
- May/June 2016
  - First read of recommendation at PC and MRC
- June – August 2016
  - Informational review of recommendation at PC and MRC
- Following resolution of FERC Deficiency notice related to Lower Voltage Facilities exemption filing
  - Anticipated request for endorsement at PC and MRC
Appendix: Transmission Substation Equipment Types in RTEP

• Breaker Bay
• Breaker Disconnects
• Breaker Drops
• Capacitor
• Circuit Breaker
• Control Building
• Current Transformer
• Digital Microwave
• Disconnect Switch
• Entrance Conductor

• Exit Conductor
• Fiber Optic Terminal Equipment
• Fuse
• Ground Grid
• Lightning Arrestors
• Line Trap
• Microwave Communications
• Motor Operated Disconnect (MOD) Switch
• Protection Relays
• Protection Scheme

• Reactor
• Relay
• Riser
• RTU
• SCADA control
• Shunt Reactor
• Station Equipment
• Switch
• Termination
• Tie Breaker
• Transformer