Transmission Substation Equipment in FERC Order 1000

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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
April 2016
  - Conceptual discussion at PC and MRC
May – August 2016
  - Informational review of recommendation at PC and MRC
August 2016
  - FERC Deficiency notice related to Lower Voltage Facilities exemption filing resolved
January 2017
  - Formal first read, Stakeholder comments received and incorporated
February 2017
  - Request for endorsement at PC and MRC
Appendix
Appendix: Transmission Substation Equipment Types in RTEP

- Breaker Bay
- Breaker Disconnects
- Breaker Drops
- Capacitor
- Circuit Breaker
- Control Building
- Current Transformer
- Potential 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
- “Instrument” transformers and “Station service” transformers
- Transformers* (not eligible for exemption)

* Transformers were in the original scope but removed from the final recommended. I.e. Transformers will not be exempted from the FERC Order 1000 process as part of the Transmission Substation Equipment effort. Stakeholders suggested that instrument transformers and station service transformers not fall under a general “transformer” umbrella.