

Transmission Substation Equipment in FERC Order 1000



Mark Sims
Manager, Transmission Planning
Markets and Reliability Committee
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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

- 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, MRC and MC

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
- Other Transformers* (not eligible for exemption)

* Transformers were in the original discussion of scope but removed from the final recommendation per stakeholder request. 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.