Short Circuit Breaker Replacement Upgrades in RTEP

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Planning Committee
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• Purpose of today’s discussion
  – Review of FERC Order 1000 Activity
  – Discuss opportunities to improve process efficiency
    • Exclude specific types of Transmission Owner Upgrades
• PJM Operating Agreement
• Allows system upgrades to follow a few tracks
  – Supplemental (not PJM Board approved)
  – Immediate need Baseline reliability
  – Baseline reliability
• Applicability of PJM RTEP Window Process
• Three issues to address:

1. Short Circuit breaker upgrades and replacements
2. Substation terminal equipment
3. Transmission Owner Criteria
Short Circuit Breaker Upgrades or Replacements

• Historical look at circuit breakers in the RTEP
• Out of the 2,500+ approved Baseline projects (excludes pending and canceled):
  – Approximately 200 are Greenfield Projects
    • None of which are exclusively breaker replacements
  – Out of the approximate 2,400 Transmission Owner Upgrade projects, approximately 850 are exclusively breaker replacements
  – Average cost of project = $1.23M (includes projects replacing multiple breakers)
    • ~480 circuit breakers from 0 to 200 kV nominal voltage
    • ~370 circuit breakers from 230 kV to 765 kV nominal voltage

• A few short circuit driven upgrades 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 short circuit violation would be excluded from the FERC Order 1000 Window Process
• Similar in cost range to circuit breakers

• Located inside existing stations

• By their nature, these meet the definition of Transmission Owner Upgrades
  – Designated to the local Transmission Owner

• Availability of Substation Terminal Equipment upgrades is provided as part of the default window technical information
Next Steps

• Short Circuit breaker upgrades and replacements
  – Recommend that short circuit issues that can be solved by short circuit breaker upgrades or replacements be excluded from FERC Order 1000 competitive window process

• Substation terminal equipment
  – Approach similar to Short Circuit Breakers, continue to evaluate a next step

• Transmission Owner Criteria
  – Continue to evaluate a next step
• March 2016
  – First Read of FERC Order 1000 Short Circuit recommendation at PC and MRC
• April 2016
  – Seek endorsement of FERC Order 1000 Short Circuit recommendation at PC and MRC
• May – December 2016
  – Implementation in 2016 PJM RTEP process
Questions?

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