



Planning Criteria – N-1-1

Susan McGill
Interconnection Analysis

- Education provided at the December 2019 MIC meeting ([link](#))
- Planning criteria applied to all analysis tests performed by PJM (load flow, short circuit and stability)
- Criteria governed by NERC TPL-001-4 and Transmission Owner criteria described in the TO's FERC 715 filing
- Today, N-1-1 violations can be solved with system adjustments which includes redispatch

- All analysis performed on a 5-year out case
- N-1-1 analysis performed for system. Redispatch evaluated as a potential solution.
- Redispatch solutions provided to PJM Operations for new or revised operating procedures
- Baseline upgrades required only for violations that cannot be solved with redispatch as well as other allowed system adjustments such as PAR adjustments and switching of transmission facilities.

- All analysis performed on cases that have completed the RTEP cycle – 4 year out cases.
- N-1-1 analysis not performed with load flow. A solution to any violation would be to trip the generator under study.
- N-1-1 analysis performed in targeted areas for stability. Similar to the RTEP, network upgrades are only needed if redispatch cannot alleviate the violation.

- Require reinforcements for all N-1-1 RTEP violations
 - Planning estimates a 33% increase in criteria violations and a 20% increase in impacted facilities
- Perform N-1-1 analysis for all interconnection requests for all analysis types and require upgrades for all violations.
 - Increased time to process studies
 - Increased number of violations
 - Increased costs for all new interconnection projects

- N-1-1 upgrades for the RTEP would occur no sooner than the 2021 RTEP cycle
- N-1-1 upgrades for the interconnection queue would occur no sooner than the AI1 queue (opening in April 2022)