



Generation Interconnections

This analysis was completed to assess the reliability impact for a new generator interconnecting to the PJM system as a capacity resource.

Network Impacts - 120 MW Injection

Network impacts for the injection of 120 MW into the Dickerson 230kV Substation were evaluated for 2004 summer peak conditions. Several generation scenarios were studied in an attempt to bracket expected system conditions in 2004. At this time it is judged that no network upgrades will be required.

Based on the analysis performed, a 120 MW injection at the existing Dickerson station results in following:

- Contributes to normal loading of the four Dickerson - Quince Orchard 230 kV circuits. The flow on these circuits increased by 10 to 15 MVA each but remained below their normal rating.
- Contributes to normal loading on the Dickerson- Pleasant view 230 kV circuit. The flow on this circuit increased by approximately 45 MVA but remained below its normal rating.
- Contributes to single contingency loads on the one Dickerson -Quince Orchard 230 kV circuit for the outage of one double conducted Dickerson -Quince Orchard 230 kV circuit. The flow increased to 430 MVA but remained below the circuit's emergency rating of 730 MVA.
- Contributes substantially to single contingency loads on the Dickerson - Pleasant View 230 kV circuit for the outage of one double conducted Dickerson - Quince Orchard 230 kV circuit. The flow on the Dickerson - Pleasant View 230 kV circuit increased to 380 MVA but remained below the circuit's emergency rating of 787 MVA.
- Contributes substantially to contingency loads on the remaining Dickerson - Quince Orchard 230 kV circuits for the outage of one DCTL between Dickerson - Quince Orchard substations. The flow in this case increased up-to 525 MVA each but remained below the circuit's emergency rating of 730 MVA.
- Contributes substantially to contingency loads on the Dickerson - Pleasant View 230 kV circuit for the outage of one DCTL between Dickerson - Quince Orchard substations. The flow on the Dickerson - Pleasant View circuit increased to 444 MVA but remained below the circuit's emergency rating of 787 MVA.

A short circuit analysis was performed to evaluate the increase of circuit breaker fault duties due to the injection of 120 MW of generation into Dickerson station. The fault duty

of Dickerson generating station breakers increased close to their limits. Fault duty of Dickerson breakers is estimated to be close to 48,400 amperes versus the capability of 50,000 amperes. Although substantially higher than present levels, the duty remained below the present circuit breaker interrupting capabilities and, as such, no circuit breaker replacements were recommended.