



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 - 550 MW Injection

Network impacts for the injection of 550 MW into the Morgantown - Oak Grove 230kV lines 23067 and 23069 were evaluated for 2004 summer peak conditions.

Note: The following results include the affects of generation project #B15, also a Morgantown - Oak Grove 230kV 550MW injection, which is connected to lines 23066 and 23068.

Based on the power flow analysis performed the following network impacts were identified:

Two Oak Grove - Burtonsville circuits that exceeded their emergency rating by 6% and 2% respectively for DCTL (Double-Circuit Transmission Line) contingency outages, must be upgraded to two conductors per phase to obtain sufficient thermal capability for these circuits. The estimated cost to bundle these circuits is \$34.5 million. The estimated lead time required to construct the upgrades is 36 months.

- 106% overload on the Oak Grove - Burtonsville 230 kV (23045) circuit for the loss of the double circuit tower line involving Oak Grove - Burtonsville 230 kV (23042) and Chalk Point - Bowie 230 kV (23063/54), the contingency flow is 775 MVA. The project contributes on the order of 200 MVA to the flows on the facility whose emergency rating is 730 MVA.
- 102% on the Oak Grove - Burtonsville 230 kV (23042) circuit for the loss of the double circuit tower line involving Oak Grove - Burtonsville 230 kV (23045) and Chalk Point - Bowie 230 kV (23065), the contingency flow is 748 MVA. The project contributes on the order of 200 MVA to the flows on the facility whose emergency rating is 740 MVA.

A Short Circuit analysis was performed to evaluate the increase of circuit breaker fault duties due to the injection of #B16 generation (with #B15 already installed) into the Morgantown - Talbert/Oak Grove 230 kV circuits. The fault duty for Chalk Point Generating Station and Oak Grove substation breakers was found to be close to their limits. The fault duty at Chalk Point is approximately 62,000 amperes, which is slightly below the 63,000 ampere short circuit interruption rating of the Chalk Point circuit breakers. The fault duty at Oak Grove substation is approximately 49,000 amperes versus a 50,000 ampere short circuit interruption rating of the Oak Grove circuit

breakers. Although higher than present levels, the duty remained below the present circuit breaker interruption capabilities and, as such, no circuit breaker replacements are required.

No stability analysis was performed as part of the Feasibility Study. A stability analysis will be performed for the Impact Study. Upgrade requirements, if any, based on that analysis will be provided at that time.