

BLACK OAK PROJECT (QUEUE #47)

FEASIBILITY STUDY ANALYSIS

DESCRIPTION OF PROJECT

The developer wishes to interconnect two combustion turbine generators and one steam turbine generator for a maximum total generating capability of 500 MW at their Black Oak site in Allegany County, Maryland. The project will require a 500 kV interconnection at Black Oak Substation. The unit will generate at 18 kV using natural gas for fuel. The customer wishes to interconnect into the 500 kV and plans to have the generator in service and producing power by July 1, 2005.

ANALYSIS RESULTS

Normal (Base) System Conditions

No overloads or other system deficiencies were identified.

Single Contingency Conditions

Overload on the Bedington-Harmony Jct 138 kV line.

Multiple Contingency Conditions

No other overloads or other system deficiencies were identified as being caused by credible multiple contingencies.

Short Circuit Conditions

No breakers or transformers were identified as being over their maximum through-fault rating.

SYSTEM REINFORCEMENTS

Required Direct Interconnection Facilities

Interconnect at Black Oak Substation:

- ◆ Install two 500 kV breakers, four 500 kV disconnect switches and a 500 kV dead-end structure.
- ◆ Install 500 kV metering equipment and associated facilities

Estimated cost to install facilities at Black Oak Substation = \$2,100,000

Relay protection scheme at NUG Substation:

- ◆ Design, test and calibrate relays at NUG Substation.

Estimated cost for relay protection at NUG Substation = \$32,000

Required System Reinforcements

Construct a second double-circuit steel pole line from Bedington Substation to Harmony Jct.:

- ◆ Construct a double-circuit steel pole 138 kV line from Bedington Substation to Harmony Jct with 954 ACSR.

Estimated cost to construct 6.31 miles of 138 kV line = \$3,100,000

Required Short Circuit Reinforcements

No breaker or transformer reinforcements were identified.

Summary

Total estimated cost to interconnect the proposed generation facilities = \$5,232,000.