GATES HILL PROJECT (QUEUE #61)
FEASIBILITY STUDY ANALYSIS

DESCRIPTION OF PROJECT

The developer wishes to interconnect a steam turbine generator for a maximum total generating capability of 525 MW at their Gates Hill site in Fayette County, Pennsylvania near the village of Nemacolin. The project will require a 138 kV interconnection at a new switching station. The unit will generate at 22 kV using refuse coal for fuel. The customer wishes to interconnect into the 138 kV and plans to have the generators in service and producing power by January 1, 2006.

ANALYSIS RESULTS

Normal (Base) System Conditions

Overloads or other system deficiencies identified were: the Gates Hill-Emerald, Gates Hill-Lake Lynn, and Lake Lynn-Charleroi lines overload.

Single Contingency Conditions

Overloads or other system deficiencies were identified as being caused by credible single contingencies include the Gates Hill-Emerald, Gates Hill-Lake Lynn, and Lake Lynn-Charleroi lines.

Multiple Contingency Conditions

Overloads or other system deficiencies identified as being caused by credible multiple contingencies include the Gates Hill-Emerald, Gates Hill-Lake Lynn, and Lake Lynn-Charleroi lines.

Short Circuit Conditions

Breakers identified as being over their maximum interrupting capacity include two breakers at Lake Lynn Substation and fourteen breakers at Charleroi Substation.

SYSTEM REINFORCEMENTS

Required Direct Interconnection Facilities

New Switching Station

- Construct a 138 kV switching station
- Install 9-138 kV breakers
- Install 138 kV metering equipment and associated facilities

Estimated cost to construct new switching station = $3,900,000

Required System Reinforcements

Reconductor 138 kV lines

- Reconductor approximately 18 miles of 138 kV line from Lake Lynn Power Station to Charleroi Substation from 4/0 copper to 954 kcmil ACSR conductor. Estimated cost = $6,330,000.

Construct 138 kV lines

- Construct 17 miles of 138 kV line from new switching station to Whiteley Substation. Estimated cost = $10,025,000

Miscellaneous relaying changes

- Review relaying protection on the AP system. Estimated cost = $50,000
- Design and test relaying for NUG interconnection. Estimated cost $60,000

Required Short Circuit Reinforcements

Replace 138 kV breakers

- Replace 2-138 kV breakers at Lake Lynn Substation. Estimated cost = $433,000
- Replace 14-138 kV breakers at Charleroi Substation. Estimated cost = $3,015,000

Summary

Total estimated cost to interconnect the proposed generation facilities = $23,813,000.