DOUBS PROJECT (QUEUE #39)
FEASIBILITY STUDY ANALYSIS

DESCRIPTION OF PROJECT

The developer wishes to interconnect a generating plant in southern Frederick County, Maryland, near the town of Point-of-Rocks. The generating plant will consist of four 167 MW combustion turbine (CT) generators located adjacent to Allegheny Power's Doubs Substation. The units will generate at 16.5 kV using natural gas for fuel. The developer plans to have the generators in service and producing power by April 30, 2004.

Project # 25 in the Allegheny Power Generation Interconnection Queue is also planned for interconnection at Doubs Substation. This analysis assumes the interconnection of Project # 25 in addition to the subject project.

ANALYSIS RESULTS

Normal (Base) System Conditions

- Overloads on the Doubs-Aqueduct and the Aqueduct-Station H 230 kV lines.
- Overload on the Doubs-Station H 230 kV line.

Single Contingency Conditions

- Overloads on the Doubs-Aqueduct and the Aqueduct-Station H 230 kV lines.
- Overload on the Doubs-Station H 230 kV line.

Multiple Contingency Conditions

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

Short Circuit Conditions

18 - 230 kV and 11 - 138 kV circuit breakers at Doubs and neighboring substations were identified as exceeding their maximum interrupting capacity.

SYSTEM REINFORCEMENTS

Required Direct Interconnection Facilities

Interconnect at Doubs Substation:

- Construct a 230 kV switching station with 11 – 230 kV breakers in breaker-and-a-half configuration.

- Install 230 kV metering equipment and associated facilities.

Estimated cost to install facilities at Doubs Substation = $8,200,000.

Relay protection scheme at NUG substations:

- Design, test and calibrate relaying at NUG substations.

Estimated cost for relay protection at NUG substations = $200,000.

Reroute the Doubs – Station H 230 kV lines, and the Doubs – Loudoun 500 kV line.

- Reroute the existing 230 kV double circuit lines from AP's Doubs Substation to PEPCO's Station H Substation into new 230 kV switching station using 1272 ACSR.

- Reroute 0.5 mile of the Doubs – Loudoun 500 kV line using 2-2032 ACSR.

Estimated cost to reroute 230 kV and 500 kV transmission lines = $1,900,000.

Required System Reinforcements

Construct 230 kV line from new switching station to PEPCO's Station H Substation.

- Construct 230 kV line from new switching station at Doubs Substation to PEPCO's Station H Substation using 1272 ACSR, and change the connection of the service to Aqueduct Substation to new line.

Estimated cost to construct 8.0 miles of 230 kV line = $14,240,000.

Install 230 kV breaker terminal at Station H Substation:

- Install a 230 kV breaker terminal at Station H Substation with 230 kV metering and associated facilities.

Estimated cost to install 230 kV breaker terminal = $470,000.

Required Short Circuit Reinforcements

Replace the following overstressed circuit breakers:

- Replace 18 – 230 kV breakers, and 1 – 138 kV breaker at Doubs Substation.
- Replace 2 – 138 kV breakers at Monocacy Substation.
- Replace 2 – 138 kV breakers at Reid Substation.
- Replace 6 – 138 kV breakers at Ringgold Substation.

Estimated cost to replace overstressed breakers = $5,160,000.

Summary

Total estimated cost to interconnect the proposed generation facilities = $30,170,000.