YUKON PROJECT (QUEUE#29)
FEASIBILITY STUDY ANALYSIS

DESCRIPTION OF PROJECT

The developer wishes to interconnect 640 MW of combustion turbine generation at AP's Yukon Substation. The units will generate at 13.8 kV and will use natural gas for fuel. The customer wishes to interconnect into the 500 kV or 138 kV and plans to have the generators in-service and producing power by June 1, 2003.

ANALYSIS RESULTS

Normal (Base) System Conditions

No overloads or other system deficiencies were identified as being caused by this facility under normal system conditions.

Single Contingency Conditions

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

Multiple Contingency Conditions

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

Short Circuit Conditions

500 kV Interconnection:

20 – 138 kV circuit breakers at Yukon Substation were identified as exceeding their maximum interrupting rating. Also, two transformers were identified as exceeding there through fault capability.

138 kV Interconnection:

20 – 138 kV circuit breakers at Yukon and 18 - 138 kV breakers at neighboring substations were identified as exceeding their maximum interrupting ratings. Also, this alternative caused the fault current at Yukon Substation to exceed the station design rating. Major station upgrades will be necessary with this alternative.

SYSTEM REINFORCEMENTS

Required Direct Interconnection Facilities and System Reinforcements

500 kV Interconnection:

- Install 500 kV circuit breaker, two 500 kV air break switches, a 500 kV dead-end structure, related primary and backup protective relaying, and revenue metering. **$1,300,000**

Required System Reinforcements

None identified.

Required Short Circuit Reinforcements

500 kV Interconnection:

- Replace twenty 138 kV breakers at Yukon Substation. **$3,000,000**

- Replace two 500-138 kV transformers at Yukon Substation. (The developer may be partially or wholly responsible for the replacement of the transformers) **$7,000,000**

138 kV Interconnection:

Since Yukon Substation will exceed its designed fault current rating, it will be necessary to evaluate the entire substation to determine the necessary station upgrades. The estimated cost for a138 kV interconnection is **$15,000,000 - $20,000,000**

Summary

500 kV Interconnection:

Total estimated cost to interconnect the proposed generation facilities is **$11,300,000** Given the lead-time on equipment, it is unlikely that a June 2003 in-service date can be met.

138 kV Interconnection:

In order to facilitate the necessary Yukon upgrades, prolonged outages would be necessary. Since extended outages of the Yukon Substation are not acceptable, the developer's in-service date of June 2003 is not possible. Discussions with the developer determined that this alternative is not feasible.