T169 Corson
Generation Interconnection

General

The Interconnection Customer has proposed a 20 MW kinetic energy flywheel generating facility to be located on Woodbine-Ocean View Road, Dennis Township, Cape May County, New Jersey. The generating facility will consist of ten (10) 2 MW kinetic energy flywheels. T169 was studied as a 20 MW injection into the Atlantic City Electric's (ACE) transmission system. The project was evaluated for compliance with reliability criteria for summer peak conditions in 2012. The planned commercial in service date is January 1, 2009.

Point of Interconnection: T169 will interconnect to the ACE system at the Corson 69kV substation.

Direct Connection Requirements

Transmission Owner Scope of Direct Connection Work

The scope of work and estimated costs for the direct connection facilities is as follows:

Corson Substation
Create one (1) 69 kV terminal position and underground cabling to an estimated location outside of Corson substation for the Interconnection Customer's 69 kV line to the T169 site.

The estimated cost to perform this work is **$2,200,000**. This work can be completed in **24 to 36 months.**

Interconnection Customer Scope of Direct Connection Work

The Interconnection Customer (IC) will be responsible for the construction of all generating station facilities on the IC's side of the Point of Interconnection (POI). The above estimates do not include any of those costs. Route selection, line design, right-of-way acquisition and construction of lines will be entirely the responsibility of the Interconnection Customer.

The Interconnection Customer will be required to install metering and telemetry equipment to provide revenue metering and real-time telemetry data to PJM. The requirements for this equipment are listed in Appendix 2, Section 8 of Attachment O to the PJM Tariff, as well as PJM Manuals 01 and 14D. Protective relaying and metering design and installation must comply with Atlantic City Electric Applicable Standards.

Cost and Timing Summary

While the information in this transmittal is reasonable for the scope of work defined, it should however be noted that the cost figures are conceptual in nature at this stage, as an engineering team has not been assigned to the project. Obviously, any change to the scope of work will require that the estimates be revisited. The costs are a best estimate, but the developer will be charged for actual costs. Any under-runs or over-runs will be reconciled at the conclusion of the project.

Note: costs do not include the Contribution in Aid of Construction (CIAC) tax.

Network Impacts

Generator Deliverability

(Single or N-1 contingencies for the Capacity portion only of the interconnection)

None

Multiple Facility Contingency

(Double Circuit Tower Line contingencies only for the full energy output. Stuck breaker and bus fault contingencies will be performed for the System Impact Study)

1. The Sherman – Claysville 138kV line loads from 99.23% to 100.73% (DC power flow) of its emergency rating (292MVA) for the tower contingency outage of the Sherman – Cumberland 138kV and Cumberland – Churchtap 230kV lines (13AE). This project contributes approximately 4.4MW to cause this thermal violation.

Short Circuit

Not Required.

Contribution to Previously Identified Overloads

(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)

1. The #2 Mill-Scull 138 kV line section will be loaded to 248.2.% of emergency rating (268 MVA) for the outage of the #1 BL England-Mill-Lewis 138 kV line. This project contributes 5.1 MW to the contingency facility loading.

2. The #2 BLE-Scull 138 kV line section will be loaded to 237.4% of emergency rating (307 MVA) for the outage of the #1 BL England-Mill-Lewis 138 kV line. This project contributes 5.2 MW to the contingency facility loading.

3. The #1 BLE-Scull 138 kV line section will be loaded to 220.0% of emergency rating (307 MVA) for the outage of the #2 BL England-Mill-Lewis 138 kV line. This project contributes 5.1 MW to the contingency facility loading.

Stability and Reactive Power Requirements

Will be performed during the Queue T169 System Impact Study.

New System Reinforcements

(Upgrades required to mitigate reliability criteria violations, i.e. "Network Impacts", initially caused by the addition of this project generation)

1. To mitigate the Sherman - Claysville 138kV line overload would require upgrading by reconductoring the line with an ACSS conductor. The estimated cost to perform this work is **$800,000** and will take **30 months** to complete from the time "Notice to Proceed" is given after the ISA and CSA are executed.

Contribution to Previously Identified System Reinforcements

(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the System Impact Study)

1. To mitigate the #2 Mill-Scull 138 kV line section overload will require a rebuild and reconductor of the #2 Mill-Scull 138kV line with a larger conductor. The estimated cost to perform this work is **$4,800,000** and will take **30 months** to complete from the time "Notice to Proceed" is given after the ISA and CSA are executed.

2. To mitigate the #2 BLE-Scull 138 kV line section overload will require a rebuild and reconductor of the #2 BLE-Scull 138 kV line with a larger conductor. The estimated cost to perform this work is **$2,000,000** and will take **30 months** to complete from the time "Notice to Proceed" is given after the ISA and CSA are executed.

3. To mitigate the #1 BLE-Scull 138 kV line section overload will require a rebuild and reconductor of the #1 BLE-Scull 138 kV line with a larger conductor. The estimated cost to perform this work is **$2,000,000** and will take **30 months** to complete from the time "Notice to Proceed" is given after the ISA and CSA are executed.