

# ***Generation Interconnection Feasibility Study Report W3-034***

The Interconnection Customer (IC) has proposed a 7.5 MWE (7.5 MWC) synthesis gas fueled generating facility consisting of a single boiler and steam turbine. The project is to be located in Egg Harbor Township, Atlantic County, New Jersey. PJM studied W3-034 as a 7.5 MW injection into the Atlantic City Electric (ACE) system at the Pleasantville 69/12 kV substation and evaluated it for compliance with reliability criteria for summer peak conditions in 2014. The proposed in-service date, as stated in Attachment N, is March 1, 2012.

## **Point of Interconnection**

W3-034 will interconnect with the Atlantic City Electric system at the Pleasantville 69/12kV (T5) 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:

1. Establish one new 12 kV feeder with PAC overhead conductor from the Pleasantville Substation to the project site – approximately 2.1 miles.
2. A utility operated recloser will be required on the customer tap that will have proper relaying and communication.
3. Utility grade primary metering will be required.
4. Generation telemetry and remote trip capabilities will be provided to the control center.
5. Perform a detailed time based study.
6. Protection, Planning, and other engineering departments will perform studies, design work, and prepare engineering estimates.
7. Transfer trip may be required.

The estimated cost to perform this work is as follows:

<b>Estimated Costs</b>			
<b>Pleasantville Substation T5</b>			
New/Replacement Transformer			
PAC Express Feeder		Miles	\$840,000
Fiber Installation	2.1	Miles	\$105,000
New Feeder Terminal			\$25,000
Recloser w/ Relaying and Communications			\$50,000
Utility Grade Metering			\$20,000
SCADA Integration into EMS			\$10,000
Detailed Time Based Study			\$30,000
Various Departments Work			\$20,000
<b>Subtotal Cost</b>			<b>\$1,100,000</b>
<b>Subtotal Cost with 18% Overheads</b>			<b>\$1,298,000</b>
<b>Approximate Total Cost with 15% Contingency</b>			<b>\$1,492,700</b>

The estimated time to complete this work is **12 - 18 months** after receipt of a fully executed Interconnection Service Agreement (ISA) and Interconnection Construction Service Agreement (CSA).

Note: the above cost does not include the Contribution in Aid of Construction (CIAC) tax.

**Special Operating Requirements**

1. The Transmission Owner will require the capability to remotely trip the generator from its System Operations facility. Such tripping may be facilitated by either a generator breaker, inverter (if so equipped), or a line recloser, depending upon the specific circumstances and the evaluation of the Company.
2. The Interconnection Customer will grant its permission to PJM for PJM to send the Company all telemetry that the Interconnection Customer sends to PJM.
3. The Interconnection Customer will be required to make provisions for a voice quality phone line within approximately 3 feet of each Transmission Owner metering position to facilitate remote interrogation and data collection.

**Interconnection Customer Scope of Direct Connection Work**

The Interconnection Customer (IC) assumes full responsibility for design and construction of all facilities associated with the W3-034 generating station. Site preparation including grading and an access road, as necessary, is assumed to be by the IC.

The IC 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's Applicable Standards.

### **Transmission Network Impacts**

Potential transmission network impacts are as follows:

#### **Generator Deliverability**

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

None

#### **Multiple Facility Contingency**

*(Double Circuit Tower Line, Line with Failed Breaker and, Bus Fault contingencies for the **Full** energy output.*

None

#### **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)*

None

#### **Short Circuit**

None

#### **Stability Analysis**

Not required due to project size.

#### **Dynamic Analysis**

A time-based dynamic study will commence during the System Impact Study phase of W3-034. Once complete, the results of the study will be reviewed and the proposed project will be evaluated for protection and coordination issues. Other required upgrades may be identified at that time.

**Other Charges**

It is anticipated that the Interconnection Customer will be charged for ongoing operation and maintenance of the attachment facilities. The methodology of calculating this charge is still under development.

**New System Reinforcements**

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

None

**Contribution to Previously Identified System Reinforcements**

*(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project.)*

None

**Potential Congestion due to Local Energy Deliverability**

*(PJM also studied the delivery of the energy portion of the surrounding generation. Any potential problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with Network Upgrades to eliminate the operational restriction at their discretion by submitting a Transmission Interconnection Request. Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full deliverability for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which analyzes all overload conditions associated with the identified overloaded element(s). As a result of the aggregate energy resources in the area, the following violations were identified:*

These are **not** required reliability upgrades.

None