

***PJM Generator Interconnection  
U3-004 Cecil 2 MW  
Feasibility Study***

**January 2009**  
*DMS #523014*

## ***General***

Queue U3-004 is a request to interconnect two 1.0 MW (Net Energy, and Maximum Facility Output) landfill gas reciprocating engine synchronous generators to the Cecil substation 34 kV line #MD3484. Queue U3-004 is located at the Cecil County Landfill, 758 E. Old Philadelphia Road, Elkton, Maryland. Queue U3-004 is scheduled for commercial operation in 2009.

## ***Direct Connection Requirements***

Queue U3-004 generation can be connected to Delmarva's Cecil substation 34 kV line #MD3484 as shown on the one line diagram below.

**Queue U3-004 Interconnection Customer Scope of Work**

Queue U3-004 Interconnection Customer is responsible for design, construction and costs for all facilities associated with the U3-004 generation on the Interconnection Customer side of the POI (Point of Interconnection) on the one line diagram on page 1.

Queue U3-004 will also be responsible for the cost of the following upgrades which must be completed to comply with requirements necessary to connect to the Delmarva system:

**TBD**

**Interconnected Transmission Owner (Delmarva) Scope of Work**

The following upgrades are required to mitigate impacts to the Delmarva system resulting from the interconnection of Queue U3-004:

\$210,000*	0.7 mi. 34.5 kV line
\$ 30,000	34.5 kV Recloser
\$ 30,000	Revenue Meter
<u>\$ 10,000</u>	600 Amp Group Operated Switch
<b>\$280,000*</b>	<b>Total Direct Connection Cost</b>

*\*Does not include Right-of-Way costs for 0.7 mi. 34.5 kV line.  
0.7 mi. length is assumed at this time, it may be more or less and affect the cost.*

Time to construct the above facilities is estimated at **9-12 months.**

## ***Network Impacts***

Queue U3-004 was studied as a 2 MW energy injection into Cecil line #MD3484. U3-004 was evaluated for compliance with reliability criteria for summer peak conditions in 2013. Potential network impacts were as follows:

### NETWORK IMPACTS

#### **Generator Deliverability**

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

No problems identified.

#### **Multiple Facility Contingencies**

*(Double Circuit Tower Line contingencies only for the full energy output. Stuck Breaker and Bus Fault contingencies will be performed for the Impact Study)*

No problems identified.

#### **Contribution to Previously Identified Overloads**

*(This project contributes greater than the PJM cost allocation threshold loading to the following contingency overloads, i.e. "Network Impacts", identified for either (i) Earlier generation or transmission interconnection projects in the PJM Queue for upgrades >\$5M, or (ii) Projects within the same PJM Queue for upgrades <\$5M )*

None identified.

#### **Short Circuit**

**TBD (Generator and transformer impedance data was not provided by the Interconnection Customer)**

#### **Stability Analysis**

Not required because of generator size and Point of Interconnection.

## NETWORK UPGRADE REQUIREMENTS

*(Queue U3-004 cost allocation for these upgrades will be determined for the 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)*

None required.

### **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 Impact Study)*

None.

### **Short Circuit Upgrades**

**TBD (Generator and transformer impedance data was not provided by the Interconnection Customer)**