

***Generation Interconnection
Combined Feasibility/System Impact
Study Report***

For

***PJM Generation Interconnection Request
Queue Position V3-011***

Sussex 12.47kV

January 2010

Preface

The intent of the Combined Feasibility/System Impact Study is to determine a plan, with approximate cost and construction time estimates, to connect the subject generation interconnection project to the PJM network at a location specified by the Interconnection Customer. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system. All facilities required for interconnection of a generation interconnection project must be designed to meet the technical specifications (on PJM web site) for the appropriate transmission owner.

In some instances an Interconnection Customer may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection or merchant transmission upgrade, may also contribute to the need for the same network reinforcement. The possibility of sharing the reinforcement costs with other projects may be identified in the Feasibility Study, but the actual allocation, if any, is included in the System Impact Study.

The Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs associated with them will be addressed when seeking an Interconnection Agreement as outlined below. Developer will also be responsible for providing and installing metering equipment in compliance with applicable PJM and Transmission Owner standards.

General

The developer has proposed a 3.4 MW (3.4 MW capacity) methane fueled generating facility, consisting of two Caterpillar 3520 reciprocating engine generator sets. The facility will be located in Lafayette, New Jersey.

Attachment facilities and local upgrades (if required) along with terms and conditions to interconnect V3-011 will be specified in a separate two party Interconnection Agreement (IA) between the Transmission Owner and the Interconnection Customer as this project is considered FERC non-jurisdictional per the PJM Open Access Transmission Tariff (OATT). *From the transmission system perspective, no network impacts were identified as detailed below.*

Point of Interconnection

V3-011 will interconnect with the Jersey Central Power and Light distribution system as a tap of an existing 34.5 kV distribution circuit from the Lime Crest substation.

Network Impacts

The queue V3-011 project was studied as a 3.4MW capacity injection into JCP&L's system at the Lime Crest 34.5kV substation. The project was studied on a combined feasibility-impact basis which utilizes an AC analysis, and incorporates all contingency types. Project V3-011 was evaluated for compliance with reliability criteria for summer peak conditions in 2014.

Potential network impacts were as follows:

Generator Deliverability

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

No problems identified.

Multiple Facility Contingency

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

No problems identified.

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)

No problems identified.

Short Circuit

Not required.

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

Stability Analysis

Not required.