

***PJM Generator Interconnection  
Feasibility/System Impact Study  
Report  
# S34 Handsome Lake Energy 345 kV  
20 MW  
(20 MW Capacity)***

***May 2007***

DOCS 421297, v1

## **Introduction**

The intent of this Feasibility/System Impact Study is to determine a plan, with conceptual cost and construction time estimates, to integrate the project S34 generation upgrade to the PJM network at an existing Interconnection point, Handsome Lake transmission substation, for an existing facility, Handsome Lake Energy.

The Feasibility/System Impact Study estimates do not include the feasibility, cost, or time required to perform the upgrade at the existing Handsome Lake Energy facility. The project developer is responsible for all costs associated with the upgrade of the facility.

## **S34 Handsome Lake 345 kV Feasibility / System Impact Study Report**

### **General**

The Handsome Lake Energy, LLC (Interconnection Customer or IC) request is to perform upgrades at the existing five (5) simple cycle combustion turbines located at the Handsome Lake Energy facility. This upgrade will result in an increase of four (4) MW of generation per combustion turbine, for a total increase of 20 MW. This upgrade will increase the available capacity at the Handsome Lake Energy facility from the existing capacity of 250 MW, to a new total capacity of 270 MW. This proposed upgrade will not change the characteristics of the attached generators or the generator step-up transformers for each of the combustion turbines.

See Figure 1 for diagram of Interconnection.

### **Network Impacts**

The **S34 project was studied as an injection of 20 MW into the Handsome Lake 345 kV substation.** Project S34 was evaluated for compliance with reliability criteria for summer peak conditions in 2008. The system was studied with the Warren-Falconer 115 kV line alternately open or in-service. Potential network impacts were as follows:

#### **Generator Deliverability**

None.

#### **Multiple Facility Contingency**

None.

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

None.

#### **New System Reinforcements**

None.

#### **Contribution to Previously Identified System Reinforcements**

None.

### **Short Circuit**

Short circuit studies were not performed and are not required as no changes to the electrical characteristics of the generators or the generator step-up transformer(s) are to be performed for this upgrade as specified by the IC.

Figure 1: Diagram of Interconnection

