PJM Generator Interconnection Request
Queue #D1
Engleside 69 kV
Feasibility/Impact Study Report

May 2001
DMS# 133399

Engleside (Sight and Sound) Impact Study

General

Sight and Sound Ministries, Inc. proposes to install a 2.4 MW generation plant, comprised of two 600 kW units and one 1200 kW unit subtracting a base load of .8 MW from the installed capacity results in 1.6 MW available to be delivered to the system at the existing Sight and Sound Theatre in Strasburg, Lancaster County, Pennsylvania. The capacity increase is planned to go in service immediately upon completion of the relay and control upgrades to the PP&L Electric Utilities Strasburg substation.

The intent of the impact study is to determine cost and construction time estimates of system reinforcements required to facilitate the addition of the new generating plant to the PJM system. The reinforcements include the direct connection of the generator to the system and any network upgrades necessary to maintain the reliability of the PJM system

Direct Connection

The generation project will be interconnected as shown in Figure 1 below to the sub-transmission system through existing facilities at Strasburg substation, which are rated to accommodate the generation. The following relay and control upgrades were installed at the Strasburg substation:

- Install three phase potential devices and associated facilities on the 12 kV feeder 67-3.
- Provide SCADA (Supervisory Control and Data Acquisition) monitoring of the three-phase potential on the 12 kV feeder 67-3.
- Modify the 12 kV feeder breaker 67-3, auto-reclosing scheme.

The direct connection cost, consisting of upgrading the above relay and control facilities at the Strasburg substation is $27,300.

Network Impacts

The system, as planned, was evaluated for compliance with reliability criteria. The Engleside 69 kV D1 project was studied as a 1.6 MW capacity unit. The results are summarized below.

Normal System

No identified problems.

Single Contingency (MAAC Criteria IIA)

No identified problems.

Second Contingency (MAAC Criteria IIB)

No identified problems.

Multiple Facility Contingency (MAAC Criteria IIC)

No identified problems.

Generator Deliverability

No identified problems.

Stability (MAAC Criteria IV)

Due to the size and location of the existing generation, no stability analysis was performed.

CETO/CETL (MAAC Criteria III / VIIB)

No identified problems.

Short Circuit Analysis

No identified problems.

Figure 1 D1 Engleside 69 kV