Combined Feasibility/System Impact Study Report

for

PJM Merchant Transmission Request Y1-082

"Longwood-Wye Mills 69kV"

July 2012

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 Merchant Transmission 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.

General

H-P Energy Resources, L.L.C., the Interconnection Customer (IC), has proposed Transmission Interconnection request Y1-082 to upgrade the Longwood-Wye Mills 69kV circuit's emergency rating from the existing 111 MVA to 174 MVA. The planned in-service date for the upgrades is June 1, 2016.

Network Impacts

PJM studied the Y1-082 project and evaluated it for compliance with reliability criteria for summer peak conditions in 2015. 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, Stuck 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.

New System Reinforcements

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

None

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

Stability and Reactive Power Requirement

Not required.

Short Circuit

Not required.

Transmission Owner Cost Estimates and Construction Schedule

Delmarva Power and Light's cost estimate and schedule to complete the work is as follows:

- **Substation Engineering Estimate**:
  Scope: Bus upgrades must be constructed from the line switch to the ring bus at Wye Mills Substation in order to increase the emergency rating of the Longwood – Wye Mills 69kV circuit to 174 MVA. The work includes replacing a disconnect switch and installing a combination of 2x954 ACSR per phase and 4" SPS aluminum rigid bus per phase.
  Estimate: $75,000
  Construction Time: 18 months

- **Transmission Engineering Estimate**:
  Rebuilding the circuit conductor is not necessary to accommodate the requested 174 MVA emergency rating.

Incremental Deliverability Rights (IDRs) Determination

To be performed during the Facilities Study phase if required.

ATTACHMENT 1