

## **#Z2-029 – Stuart 4 Generation Interconnection**

### **General**

The Interconnection Customer (IC) is proposing a 20.5 MW uprate to existing Stuart 4 generator, a coal plant located in Brown County, OH and has requested to be studied as a 577 MW Energy (577 MW Capacity) resource interconnecting into the Dayton Power & Light (DP&L) area. The IC has proposed in-service date is for Q4 2015. Impacts on the MISO member transmission systems will be provided in later studies.

This Generation Interconnection Feasibility Study provides analysis results to aid the IC in assessing the practicality and cost of incorporating the facility into the PJM system. This study was limited to load flow analyses of probable contingencies. If the IC elects to pursue a System Impact Study, a more comprehensive analysis will be performed.

### **Point of Interconnection**

Z2-029 will utilize the existing Point of Interconnection for the Stuart 4 facility.

### **Attachment Facilities**

No new Attachment Facilities are required to facilitate this interconnection. The single line is shown below in **Figure 1**.

### **Direct Connection Cost Estimate**

No new Direct Connection facilities are required to facilitate this interconnection.

### **Non-Direct Connection Cost Estimate**

No new Non-Direct Connection facilities are required to facilitate this interconnection.

### **Revenue Metering and SCADA Requirements**

**For PJM:** IC will be required to install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for IC's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Sections 24.1 and 24.2.

## **Network Impacts**

The Queue Project Z2-029 was studied as a 20.5 MW (20.5 MW Capacity) injection into the Stuart 345kV substation in the Dayton area. Project Z2-029 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project Z2-029 was studied with a commercial probability of 53%. Potential network impacts were as follows:

## **Summer Peak Analysis - 2018**

### **Generator Deliverability**

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

No violations were identified.

### **Multiple Facility Contingency**

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

No violations were 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 violations were identified.

### **Short Circuit**

*(Summary of impacted circuit breakers)*

Not required.

## **Light Load Analysis – 2018**

Light Load Analysis will be performed during later study phases as required by PJM Manual 14B.

## **System Reinforcements**

### **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.

### **Energy Portion of Interconnection Request**

*PJM also studied the delivery of the energy portion of the surrounding generation. Any potential problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Transmission Interconnection request.*

*Note: Only the most severely overloaded conditions are listed. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which analyzes all overload conditions associated with the overloaded element(s) identified. As a result of the aggregate energy resources in the area, the following violations were identified.*

As a result of the aggregate energy resources in the area, no violations were identified.