

***Generation Interconnection  
Feasibility Study Report – Web Version***

***For***

***PJM Generation Interconnection Request  
Queue Position Z1-015***

***Springdale 3, 4, 5 Project***

***February, 2014***

# **Feasibility Study Report**

## **Springdale 3, 4, 5 Project**

### **Introduction**

This Feasibility Study report provides the documentation of an assessment that has been performed by PJM Interconnection LLC (PJM) and FirstEnergy (FE) in response to a request made by the interconnection customer (IC) for the upgrade of the Springdale 3, 4, 5 units for an increase of the Capacity Injection Rights of 26 MW to 535 MW total. The plant currently has an MFO of 590 MW and will remain at that level after this study. The facility interconnects into the West Penn Power Company System, a part of FirstEnergy. The IC has proposed a commercial operation date of June 2015. As per the PJM RTEP study process, the project assessment was accomplished by: 1. Evaluating the reliability impact of the proposed facilities and connection on the interconnected transmission system by the performance of a power flow study; 2. Ensuring compliance with the NERC, ReliabilityFirst, PJM and FE Reliability Standards by identifying the system reinforcements that will need to be installed for an interconnection of the proposed project; 3. Coordinating and cooperating with the PJM staff and the IC by participating in project meetings and issuing this report as a part of the RTEP study process; 4. Performing a Steady State, Short-Circuit and Dynamics Study as necessary; 5. Conducting all studies in accordance with the PJM Manuals, the "FE Requirements for Transmission Connected Facilities", and the "FE Study Guide".

### **Network Impacts**

The Queue Project #Z1-015 was studied as a 26.0 MW (Capacity 26.0 MW) injection at Springdale 138 kV substation in the APS area. Project #Z1-015 was evaluated for compliance with reliability criteria for summer peak conditions in 2017. Potential network impacts were as follows:

### **Generator Deliverability**

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

None

### **Light Load Analysis**

Light Load Studies to be conducted during later study phases (applicable to wind, coal, nuclear, and pumped storage projects).

**Multiple Facility Contingency**

*(Double Circuit Tower Line, Failed Breaker and Bus Fault contingencies for the full energy output)*

None

**Short Circuit**

*(Summary form of Cost allocation for breakers will be inserted here if any)*

None

**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)*

None

**Steady-State Voltage Requirements**

*(Results of the steady-state voltage studies should be inserted here)*

None

**Stability and Reactive Power Requirement**

*(Results of the dynamic studies should be inserted here)*

None

**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)  
(Summary form of Cost allocation for transmission lines and transformers will be inserted here if any)*

None

**Delivery of Energy Portion of Interconnection Request**

PJM also studied the delivery of the energy portion of this interconnection request. Any 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 Merchant Transmission Interconnection request.

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 will study all overload conditions associated with the overloaded element(s) identified.

Not Applicable

## **Appendices**

The following appendices contain additional information about each flowgate presented in the body of the report. For each appendix, a description of the flowgate and its contingency was included for convenience. However, the intent of the appendix section is to provide more information on which projects/generators have contributions to the flowgate in question. Although this information is not used "as is" for cost allocation purposes, it can be used to gage other generators impact.

It should be noted the generator contributions presented in the appendices sections are full contributions, whereas in the body of the report, those contributions take into consideration the commercial probability of each project.

None