

PJM Generator Interconnection
U4-009 Louisa CT 230-kV
3 MW Capacity & Energy
Combined Feasibility & System Impact Study

April 2009
DMS #537192v1

Introduction

This Combined Feasibility and System Impact Study has been prepared in accordance with the PJM Open Access Transmission Tariff §36.2 and §203 as well as the Feasibility Study Agreement between Interconnection Customer (IC) and PJM Interconnection, LLC (PJM) (Transmission Provider).

Preface

The intent of combined Feasibility and System Impact Study is to determine a plan, with cost and construction time estimates, to allow the subject generation interconnection project to inject into 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 for the appropriate transmission owner.

The Feasibility and System Impact Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs may be included in the study.

Potential Network Impacts

The queue project U4-009 was studied as a 3 MW (3 MW capacity) increase to Louisa Unit 5, which injects into the Dominion system at Louisa CT 230 kV substation. The increased capability is being achieved by adding an air flow optimizer to Unit 5. U4-009 was evaluated for compliance with reliability criteria for summer peak conditions in 2012. Potential network impacts were as follows:

Generator Deliverability

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

None.

Multiple Facility Contingency

(Double Circuit Tower Line contingencies only for the full energy output. Stuck breaker and bus fault contingencies will be performed for the Impact Study)

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.

Short Circuit

There is no impact to breaker interrupting capabilities as a result of U4-009.

Stability Analysis

Stability is not required for this project.

Capacity Interconnection Rights Review

The Capacity Interconnection Rights for the Louisa CT Units 1-5 upon Dominion's integration into PJM were 465 MW; Unit 5 contributed 155 MW towards that total. Per PJM Tariff §230.3.1, the Louisa CT Units CIRs have been reduced to 464.6 MW based on the Units' operational capability testing results. The 0.4 MW reduction was due to a deficiency on Unit 1. This ISA will increase the CIRs of Unit 5 to 158 MW and the overall facility to 467.6 MW.

Maximum Facility Output Review

The Maximum Facility Output for the Louisa CT Units 1-5 upon Dominion's integration into PJM was 555 MW; Unit 5 contributed 199 MW towards that total. This queue request will increase the Maximum Facility Output of Unit 5 to 202 MW. The overall Louisa CT Units' 1-5 Maximum Facility Output will be 558 MW as a result of this project.

Interconnection Requirements

The following provides the estimated cost and schedule for the Non-Direct and Direct Connection Network Upgrades and the Attachment Facilities:

Non – Direct Connection Network Upgrades

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.

Direct Connection Network Upgrades

None.

Attachment Facilities

None.

Figure 1: U4-009 Single Line Diagram

