PJM Generator Interconnection
U2-082 Dickerson 230-kV
400 MW Capacity
Feasibility Study

October 2008
DMS #509960v1

Introduction

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

Preface

The intent of the feasibility study is to determine a plan, with preliminary cost and construction time estimates, to connect the subject generation 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 for the appropriate transmission owner.

In some instances an interconnection customer may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection or merchant transmission upgrade, may also contribute to the need for the same network reinforcement. The possibility of sharing the reinforcement costs with other projects may be identified in the feasibility study, but the actual allocation will be deferred until the impact study is performed.

The Feasibility 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 U2-082 was studied as a 400 MW Capacity injection into the PEPCO system at the Dickerson 230 kV substation (Figure 1 or Figure 2). U2-082 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, Line with Failed Breaker and Bus Fault contingencies for the full energy output)

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

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

The following table shows the percentage over duty contribution from U2-082 at each affected substation.

Project	Station D	Station H
Pre-Project	87.3%	110.4%
U2-082	+12.8%	+14.6%

1. This project causes over duty conditions on the Dickerson Station D 230kV Mirant breakers (11).

2. This project also contributes significantly to the existing over duty condition on the 230kV breakers at Dickerson Station H (13).

New System Reinforcements

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

1. Replace eleven (11) 230kV breakers at the Dickerson Station D with 80 ka breakers for a cost of approximately $16.5M. Note, one breaker is owned by Mirant. Please note that this cost does not include changes to the bus structures, insulators, disconnect switches and ground grid that maybe required from replacing the 63 ka breakers to 80 ka breakers. The replacements are estimated to take 2 years to complete.

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)

Short circuit analysis indicates that U2-082 contributes to the over duty of a total of thirteen (13) Dickerson Station H 230 kV breakers:

2. Dickerson Station H breakers are currently being upgraded to 63 kA. The cost to upgrade is estimated at $800,000. Short Circuit results indicate that the addition of U2-082 will not further over duty the upgraded breakers, but may have a cost allocation.

Figure 1

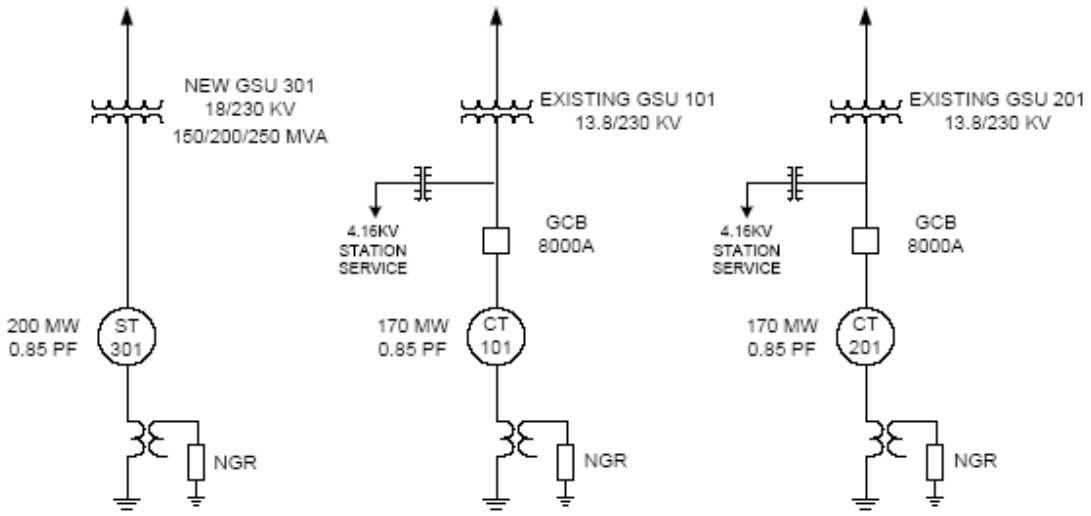

Figure 2