

***PJM Generator Interconnection  
V1-022 Plano 345kV, 380MW  
Feasibility Study***

December 29, 2011

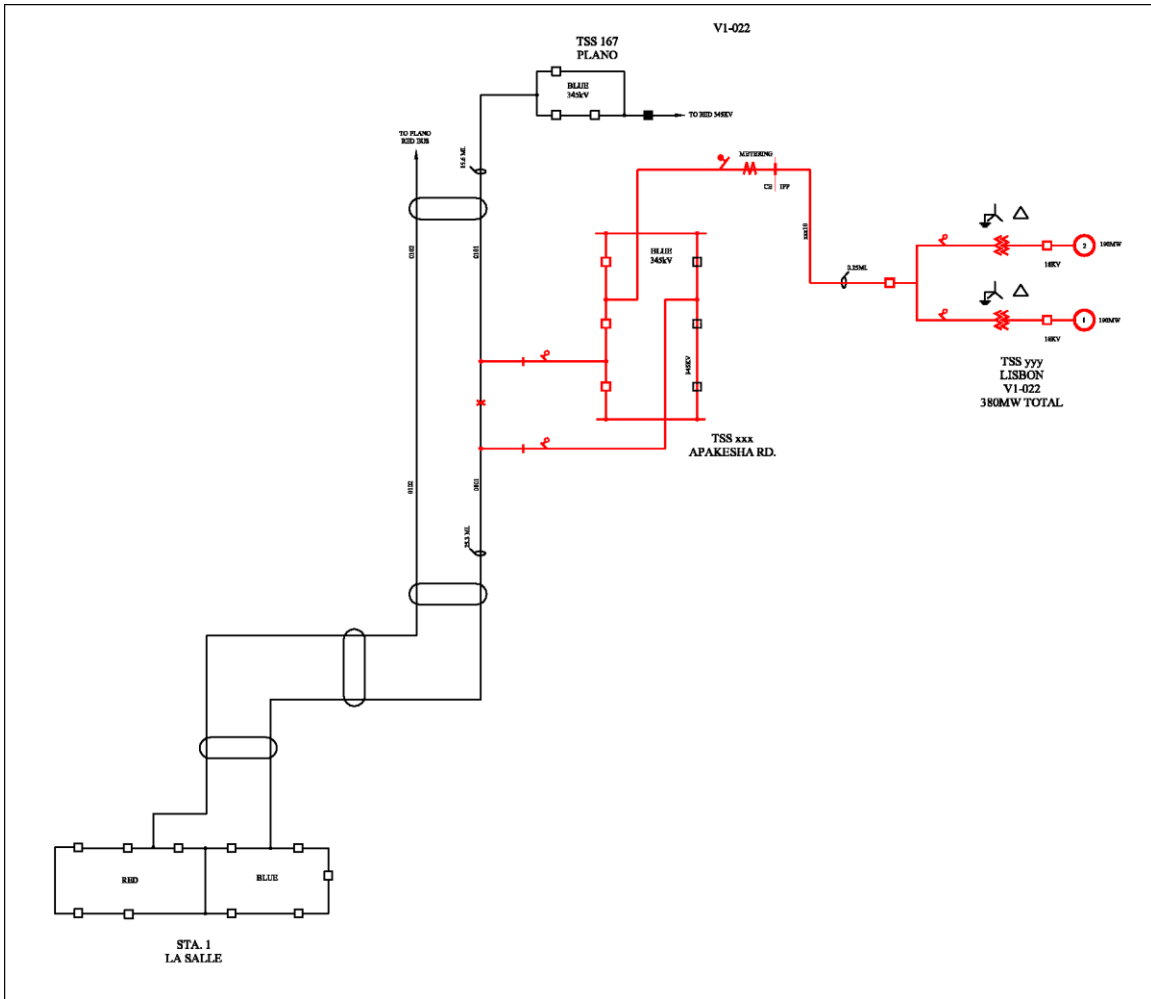


Figure 1

***Network Impacts***

The Queue Project V1-022 was studied as a(n) 380.0MW(Capacity380.0MW) injection into ComEd's system at the 50.0% tap between LaSalle (Blue) and Plano (Blue)345.0 kV line. Project V1-022 was evaluated 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 violations identified.

### Multiple Facility Contingency

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

No violations identified.

### Short Circuit

To be determined in the System Impact Study

### 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)

1. The PLANO; B-ELECT; B 345 kV line (from bus 270846 to bus 270730 ckt 1) loads from 102.18% to 108.54% (DC power flow) of its rating (1341 MVA) for the single line contingency ('345-L16703\_R-S'). This project contributes approximately 85.37 MW to the thermal violation.

```
CONTINGENCY '345-L16703_R-S' / CONTINGENCY # 515
TRIP BRANCH FROM BUS 270847 TO BUS 270731 CKT 1 / PLANO; R 345 ELECT;4R 345
END
```

2. The PLANO; R-ELECT;4R 345 kV line (from bus 270847 to bus 270731 ckt 1) loads from 116.57% to 119.63% (**DC power flow**) of its rating (1341 MVA) for the single line contingency ('345-L16704\_B-S'). This project contributes approximately 41.08 MW to the thermal violation.

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CONTINGENCY '345-L16704_B-S' / CONTINGENCY # 591
TRIP BRANCH FROM BUS 270846 TO BUS 270730 CKT 1 / PLANO; B 345 ELECT; B 345
TRIP BRANCH FROM BUS 272250 TO BUS 272278 CKT 2 / PLANO; B 138 PLANO;1I 138
TRIP BRANCH FROM BUS 270846 TO BUS 272278 TO BUS 275354 CKT 1 / PLANO; B 345 PLANO;1I 138
PLANO;1C 34.5
END
```

### Steady-State Voltage Requirements

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

To be determined in the System Impact Study

### Stability and Reactive Power Requirement

(Results of the dynamic studies should be inserted here)

To be determined in the System Impact Study.

### **Potential Issues**

Impacts on the MISO member transmission systems are not included in this analysis, but they will be included in the Impact Study, which may reveal upgrades needed in the MISO system not identified in this Feasibility Study.

### **New System Reinforcements**

None required

### **Contribution to Previously Identified System Reinforcements**

Prior projects in the PJM Queue demonstrated the need to construct new 765 kV lines from Collins Station 23 to the AEP system. This project may have a cost allocation for the following previously identified system reinforcements:

- Expansion of the 765 kV bus at Station 23 Collins to accommodate the additional circuits
- Construction of a new 765 kV circuit from Station 23 Collins east to Meadowlake substation in AEP
- Construction of a new 765 kV circuit from Station 23 Collins east to Sullivan substation in AEP
- Construction of a new 765/345 kV autotransformer at Station 23 Collins
- Relocation of existing 765kV line 2315
- Construction of a new 345 kV red/blue bus tie circuit breaker at TSS 935 Kendall County Energy Center
- Construction of two new 345 kV lines between Byron and Wayne

Additional studies will be performed during the System Impact and Facilities Studies to determine the optimum plan to address these issues. Studies will also be performed regarding cost allocation among the various projects.

### **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.*

No violations identified.