



***Facility Study
For
Generation Interconnection
Request
GEN-2010-055***

***SPP Generation
Interconnection***

(#GEN-2010-055)

February 2012

Summary

American Electric Power (AEP) performed a detailed Facility Study at the request of Southwest Power Pool (SPP) for Generation Interconnection request GEN-2010-055 (4.5 MW). The request for interconnection was placed with SPP in accordance with SPP's Open Access Transmission Tariff, which covers new generation interconnections on SPP's transmission system.

Interconnection Customer Interconnection Facilities

The Interconnection Customer will be responsible for the 13.8kV line from its gas plant substation to the Point of Interconnection (POI), a new terminal on the 13.8kV distribution bus at the Wekiwa 138kV substation. In addition, the customer will be responsible for reactive power compensation equipment to maintain 95% lagging (providing vars) and 95% leading (absorbing vars) power factor at the point of interconnection.

Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades

Per the following Facility Study, the Interconnection Customer is responsible for \$309,300 of Transmission Owner Interconnection Facilities and non-shared network upgrades.

Shared Network Upgrades

The interconnection customer was studied within the DISIS-2011-001 Impact Study. At this time, the Interconnection Customer is allocated \$0 for shared network upgrades.

If higher queued interconnection customers withdraw from the queue, suspend or terminate their GIA, restudies will have to be conducted to determine the Interconnection Customers' allocation of shared network upgrades. All studies have been conducted on the basis of higher queued interconnection requests and the upgrades associated with those higher queued interconnection requests being placed in service.

***Generation Interconnection
Facilities Study***

For

GEN-2010-055

Southwest Power Pool

***American Electric Power
Southwest Transmission Planning***

February 2012

Table of Contents

Introduction 5
Interconnection Facilities..... 6
Short Circuit Fault Duty Evaluation 7
Interconnection Costs 8
Appendix 9
 Figure 1: New Wekiwa 13 kV terminal for Interconnection..... 9

Introduction

The Southwest Power Pool (SPP) has requested a Facilities Study for interconnecting the 4.5 MW GEN-2010-055 in Tulsa County, Oklahoma. The proposed in-service date is October 2011.

The purpose of this Facilities Study is to identify the costs for connecting GEN-2010-055 to AEP's transmission system. This Facilities Study evaluates the connection of GEN-2010-055 to AEP's 13.8 kV distribution system and GEN-2010-055's usage of AEP's 138/13.8 kV transformer to reach AEP's 138 kV transmission system. This Facilities Study is done in conjunction with SPP Feasibility and Impact Studies for Generation Interconnection Request GEN-2010-055.

A detailed description of all costs associated with the construction of this interconnection is shown in Table 1.

Interconnection Facilities

The interconnection point for GEN-2010-055 has been identified as the AEP Wekiwa substation. At this interconnection point AEP will install, operate, and own a new 13.8 kV circuit breaker on the existing 13.8 kV distribution bus. AEP will also allow GEN-2010-055 to utilize a portion of the existing 20/26.7/33.3 MVA 138 /13.8 kV transformer to reach the 138 kV transmission system. This substation consists of a six-breaker 138 kV ring bus and other associated equipment.

The design and construction of the new 13.8 kV terminal will meet all AEP specifications for stations. Bus work and disconnect switches will be designed to accommodate the loading requirements, and circuit breakers will be rated to ensure adequate load and fault interrupting capability. 13.8 kV metering equipment will be installed at Wekiwa Substation to monitor the plant output and will meet the required accuracy specifications. Meter values will be adjusted for losses to the 138 kV transmission system.

AEP will modify the following substations to accommodate the new interconnection:

Wekiwa Substation (Figure 1):

- Add 13 kV recloser with fused bypass and dip structure
- Underground cable to new dip structure and GOAB switch outside substation fence
- Revenue grade 13 kV metering

A 13 kV line will be required to connect GEN-2010-055 to the Wekiwa Substation. See Figure 1 for details. GEN-2010-055 will install, maintain, and own a new 13 kV generator tap from the PSO's new dip structure outside Wekiwa Substation to their GEN-2010-055 facilities.

Short Circuit Fault Duty Evaluation

Short circuit duty at the interconnection point will not exceed 10.5 kA so no system upgrades are needed.

Table 1 - Interconnection Costs

Listed below are the costs associated with interconnecting the 4.5 MW GEN-2010-055 generation facilities to the AEP transmission system.

System Improvement	Cost (2012 Dollars)
Interconnection point – Wekiwa 138 kV Substation: Install a new recloser with fused bypass, revenue metering and 3 phase underground cable	\$296,000
Distribution Feeder: 3 Phase Dip structure with GOAB switch	\$13,300
Interconnection Facility Total Costs	\$309,300

Tulsa LFG will pay a monthly Facilities Charge to utilize a portion of the 138/13.8 kV transformer to reach the 138 kV transmission system.	To be determined
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Appendix

Figure 1: New 13 kV Terminal @ Wekiwa 13 kV substation

