



**AEP Generator Replacement
Facilities Study Report
for
GEN-2022-GR1
Pirkey 138 kV
Harrison County, Texas**

July 2023

1 Facilities Study Summary

American Electric Power (AEP) Southwest Transmission Planning performed the following study at the request of the Southwest Power Pool (SPP) for SPP Generation Replacement request GEN-2022-GR1. Per the SPP Generator Interconnection Procedures (GIP), SPP requested that AEP perform the Replacement Generating Facility (RGF) Studies in accordance with Section 3.9 for the following Interconnection and/or Network Upgrade(s):

1.1 Project Description

Gen-2022-GR1 proposes to replace the existing Pirkey generation with approximately 580 MW of solar generation at the 138 kV Pirkey AEP station (Figure 1) in Harrison County, Texas.

1.2 AEP's Scope of Work to Facilitate Replacing Existing Gen.

- To accommodate the replacement of the existing 138 kV Pirkey generation, upgrades will be completed to the existing generation terminal equipment. 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. AEP will own, operate and maintain the 138 kV Pirkey station.
- Installation of associated protection and control equipment, SCADA, and revenue metering will be required at the AEP 138kV Pirkey station. AEP reserves the right to specify the final acceptable configuration considering design practices, future expansion, and compliance requirements.
- It is understood that the Interconnection Customer is responsible for all connection costs associated with interconnecting GEN-2022-GR1 to the AEP transmission system. The cost of the customer's generating facility and the costs for the line connecting the generating facility to AEP's transmission system (beyond the first span exiting the POI station) are not included in this report; these are assumed to be the Customer's responsibility.
- The customer will be responsible for the cost of constructing a fiber-optic connection from their telecom equipment to AEP's 138 kV Pirkey control house.

1.3 Short Circuit Evaluation

- It is standard practice for AEP to recommend replacing a circuit breaker when the current through the breaker for a fault exceeds 100% of its interrupting rating with recloser de-rating applied, as determined by the ANSI/IEEE C37.5-1979, C37.010-1979 & C37.04-1979 breaker rating methods.
- At Pirkey station, no breakers were found to exceed their interrupting capability after the addition of the generation and related facilities. Therefore, there are no additional short circuit upgrade costs associated with the GEN-2022-GR1 interconnection.

1.4 Stability Evaluation

- Based on the results of the GEN-2022-GR1 DISIS short circuit and stability report, AEP is not aware of any instances where the system does not meet TPL-001 stability performance requirements for the planning events and generation dispatch conditions that were considered in this DISIS study.

1.5 Interconnection Cost of Facilities Included in the Facilities Study:

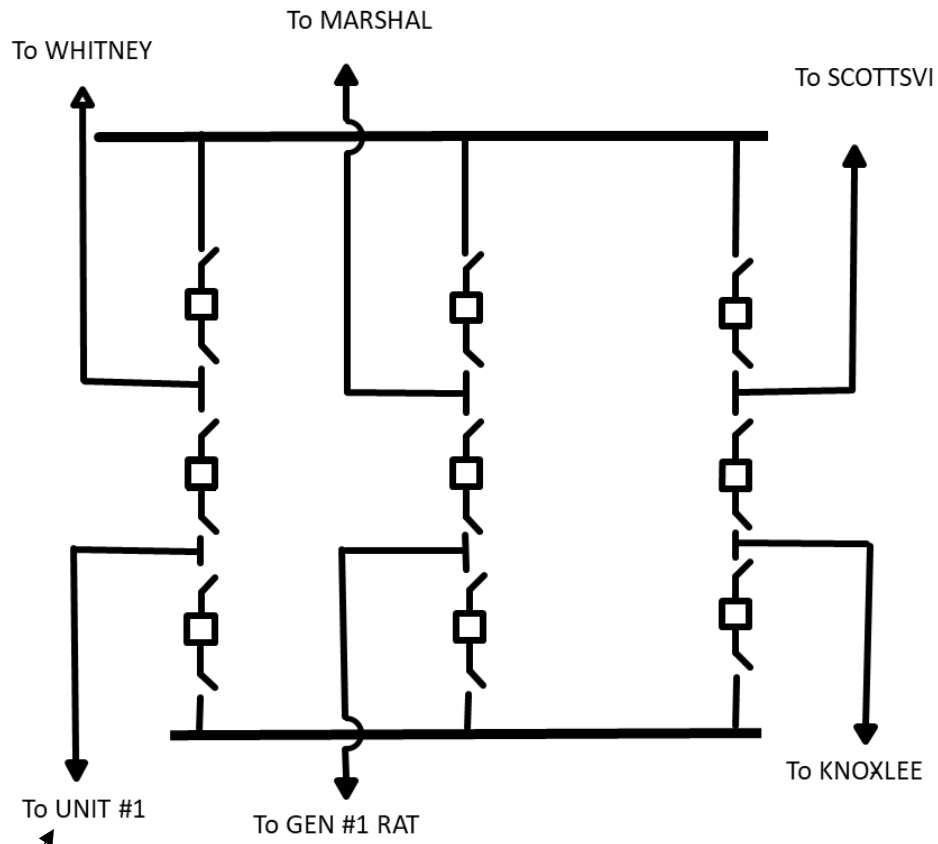
Network Upgrades	\$0
Transmission Owner Interconnection Facilities (TOIF) Upgrades (GEN-2022-GR1)	\$1,145,382
Total Cost	\$1,145,382

The estimates do not include the impact that delays in obtaining ROW, permits, or other approvals may have.

1.6 Project Lead time

Project in-service date is projected to be 30 months after the issuance of Authorization to Proceed from the Interconnection Customer.

Figure 1: Point of Interconnection (POI INFORMATION) One-Line Diagram



Pirkey Generation
Being Replaced

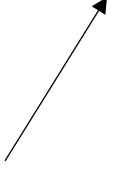


Figure 2: Point of Interconnection Maps

