AEP Generation Interconnection

Facilities Study Report

for

DISIS-2022-001

GEN-2022-071

Canadian River to Talawanda 138 kV transmission line

Pittsburg County, Oklahoma

November 2025

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 Interconnection request DISIS-2022-001; GEN-2022-071. Per the SPP Generator Interconnection Procedures (GIP), SPP requested that AEP perform an Interconnection Facilities Studies (IFS) for Network Upgrade(s) in accordance with Section 8.11 for the following Interconnection and/or Network Upgrade(s):

1.1 Project Description

GEN-2022-071 proposes to install a 90.824 MW solar generating facility in Pittsburg County, Oklahoma (Figure 2). The point of interconnection for the generating facility will be AEP's 138 kV Canadian River to Talawanda transmission line (Figure 1).

1.2 AEP's Scope of Work to Facilitate Interconnection

- To accommodate the interconnection to AEP's existing 138 kV Canadian River to Talawanda transmission line, a new 138 kV, 3-breaker ring bus station will be installed. Also, AEP will complete any needed remote work at the Canadian River and Talawanda stations associated with this project. The design and construction of the new station will meet all AEP specifications. 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 new 138 kV ring bus station.
- Installation of associated protection and control equipment, SCADA, and revenue metering will be required at the new 138 kV ring bus station. AEP reserves the right to specify the final acceptable configuration considering design practices, future expansion, and compliance requirements.
- AEP will extend one span of 138 kV transmission line from the generator's terminal at the new 138 kV ring bus station to the GEN-2022-071 POI. AEP will build and own the first transmission line structure outside of new 138 kV ring bus station, to which AEP's transmission line conductor will attach. Right of Way (ROW) will be required for this span.
- It is understood that the Interconnection Customer is responsible for all of the connection costs associated with interconnecting GEN-2022-071 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) 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 new 138 kV ring bus station.

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.
- In the AEP system, 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 DISIS-2022-001; GEN-2022-071 interconnection.

1.4 Stability Evaluation

- Based on the results of the DISIS-2022-001 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 (Build new 138 kV 3-breaker ring bus station)	$15,441,237
Transmission Owner Interconnection Facilities (TOIF)	$3,284,125
Remote End Work	$686,616
Total Cost	$19,441,978

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 36 months after the issuance of Authorization to Proceed from the Interconnection Customer.

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

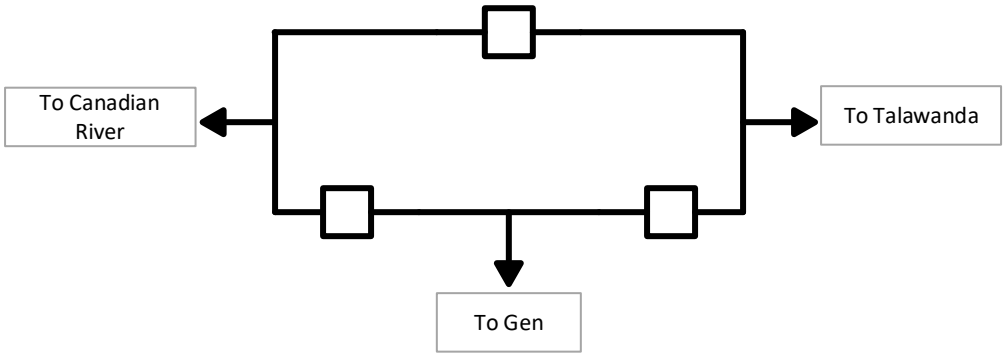
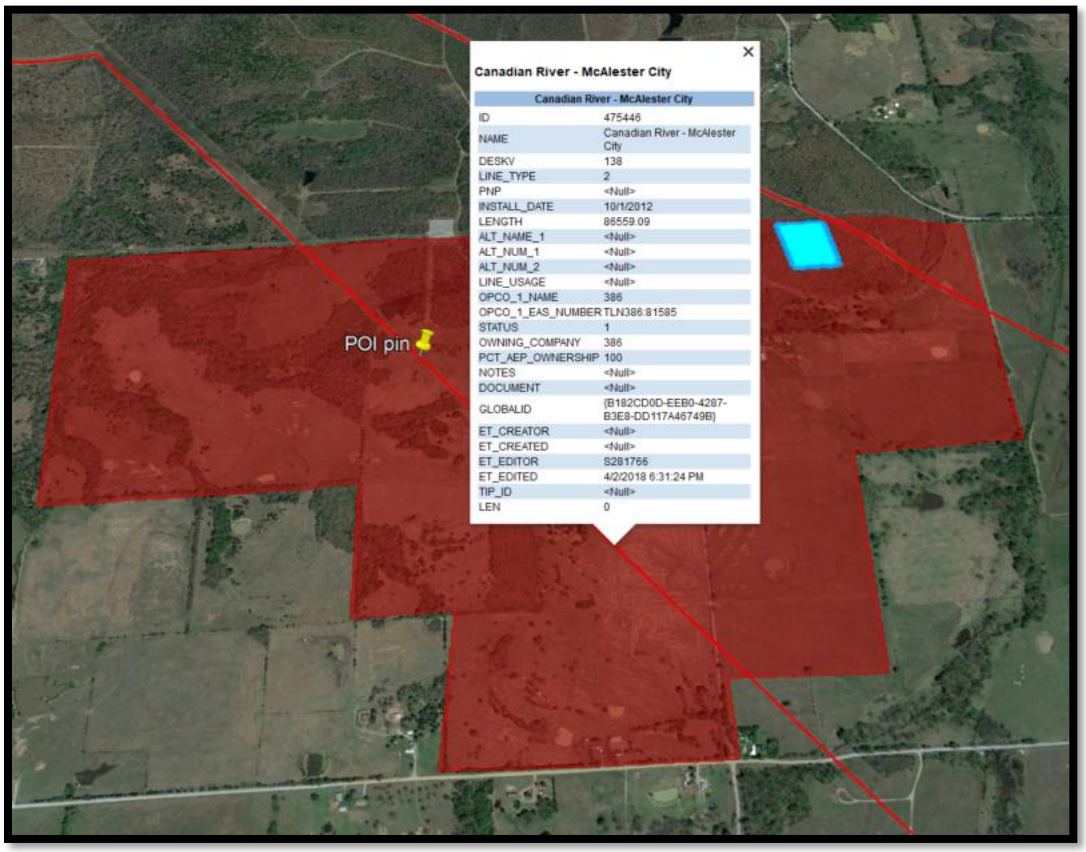


Figure 2: Point of Interconnection Map



AEP Generation Interconnection

Facilities Study Report

for

DISIS-2022-001

Welsh to Wilkes 345 kV Line Rebuild

Morris County, Texas

November 2025

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 Interconnection request DISIS-2022-001. Per the SPP Generator Interconnection Procedures (GIP), SPP requested that AEP perform an Interconnection Facilities Study (IFS) for Network Upgrade(s) in accordance with Attachment V, Section 8.11 of the Generator Interconnection Procedures (GIP).

Welsh to Wilkes 345 kV

- Rebuild the approx. 12.1-mile line section to achieve the desired 1000 MVA summer emergency rating.

1.1 Project Description

Per the DISIS-2022-001 study request, AEP proposes to rebuild a section of the Welsh to Wilkes 345 kV line (Figure 1) in Morris County, Texas.

1.2 AEP's Scope of Work to Facilitate Interconnection

- To accommodate the desired summer emergency rating of 1000 MVA requested for the Welsh to Wilkes 345 kV line, an existing approx. 12.1-mile line section will be rebuilt.
- The design and construction of the new equipment will meet all AEP specifications for transmission lines. AEP will own, operate, and maintain the Welsh to Wilkes 345 kV line.
- It is understood that the Interconnection Customers are responsible for the cost of all of this work.

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.
- In the AEP system, no breakers were found to exceed their interrupting capability after the addition of this equipment. Therefore, there are no additional short circuit upgrade costs associated with the DISIS-2022-001, UID 170696 interconnection.

1.4 Interconnection Cost of Facilities Included in the Facilities Study:

Rebuild an approx. 12.1-mile section of the Welsh to Wilkes 345 kV line	$68,578,606
Total Cost	$68,578,606

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

1.5 Project Lead time

Project in-service date is projected to be 48 months after the issuance of Authorization to Proceed from the Interconnection Customer.

Figure 1