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INTERCONNECTION FACILITY STUDY

for

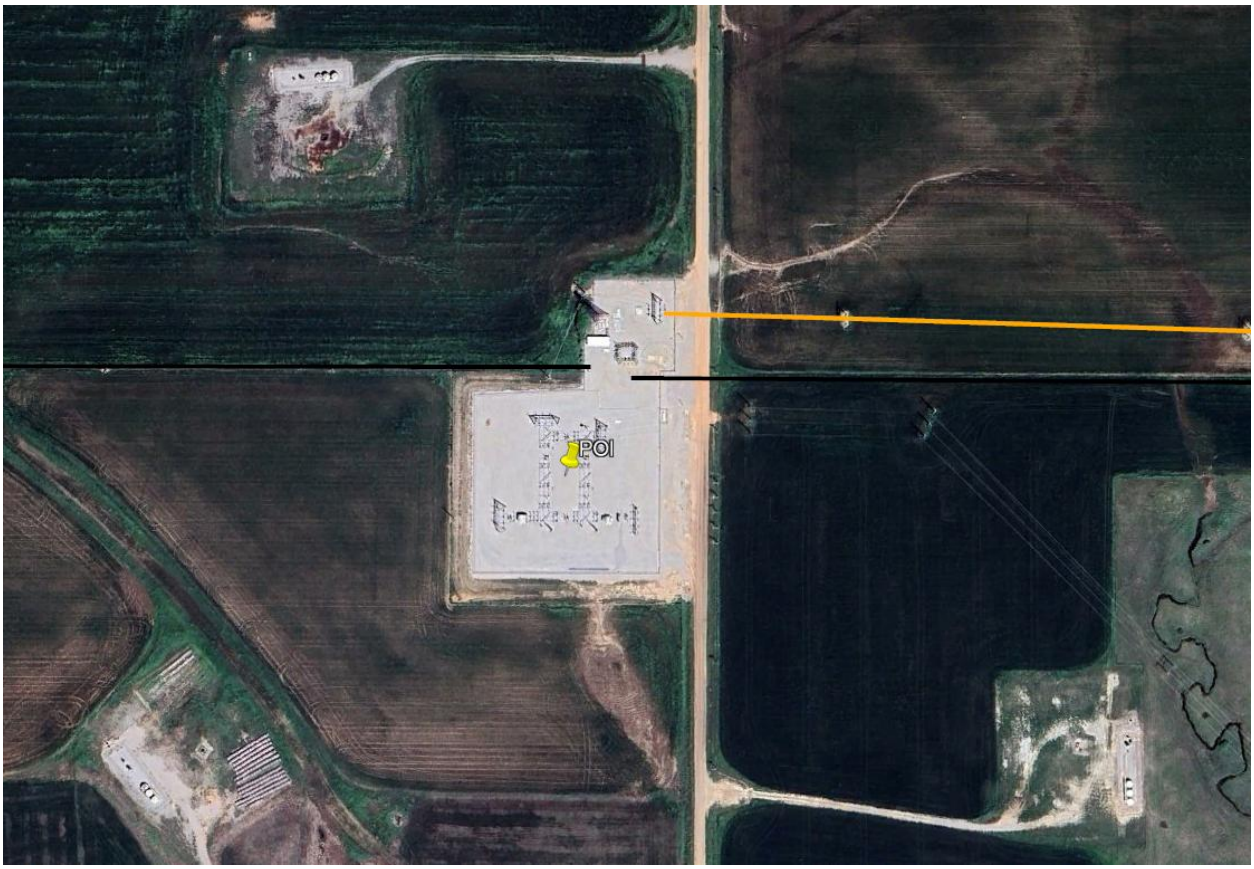
Generation Interconnection Request GEN 2022-235

150MW Battery/Storage Interconnection
in Canadian County, OK.

November 2025

SUMMARY

Pursuant to Attachment V of the tariff and at the request of the Southwest Power Pool (SPP), Western Farmers Electric Cooperative (WFEC) performed the following facility Study to satisfy the Facility Study agreement executed by the requesting customer for SPP Generation Interconnection request GEN-2022-235. 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. The requested POI will use the same 138kV terminal at El Reno Switch Station as previously provided for GEN-2017-117. The total interconnection cost for WFEC to accommodate the interconnection request at the 138kV POI is $0.



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Introduction

The Southwest Power Pool has requested a facility Study for the purpose of interconnecting 150 MW of Battery/Storage within the service territory of WFEC in Canadian County, Oklahoma. The proposed 138kV interconnection is to an existing generator terminal at the WFEC El Reno 138kV Switch Station (35°29'8.8"N, 97°57'27.7"W).

Since an existing generator terminal will be shared there is no additional interconnection cost.

Network constraints within WFEC may be verified with a transmission service request and associated studies.

Interconnection Facilities

The primary objective of this study is to identify WFEC interconnection facilities. Figure 1 below shows the proposed interconnection of GEN-2025-235.

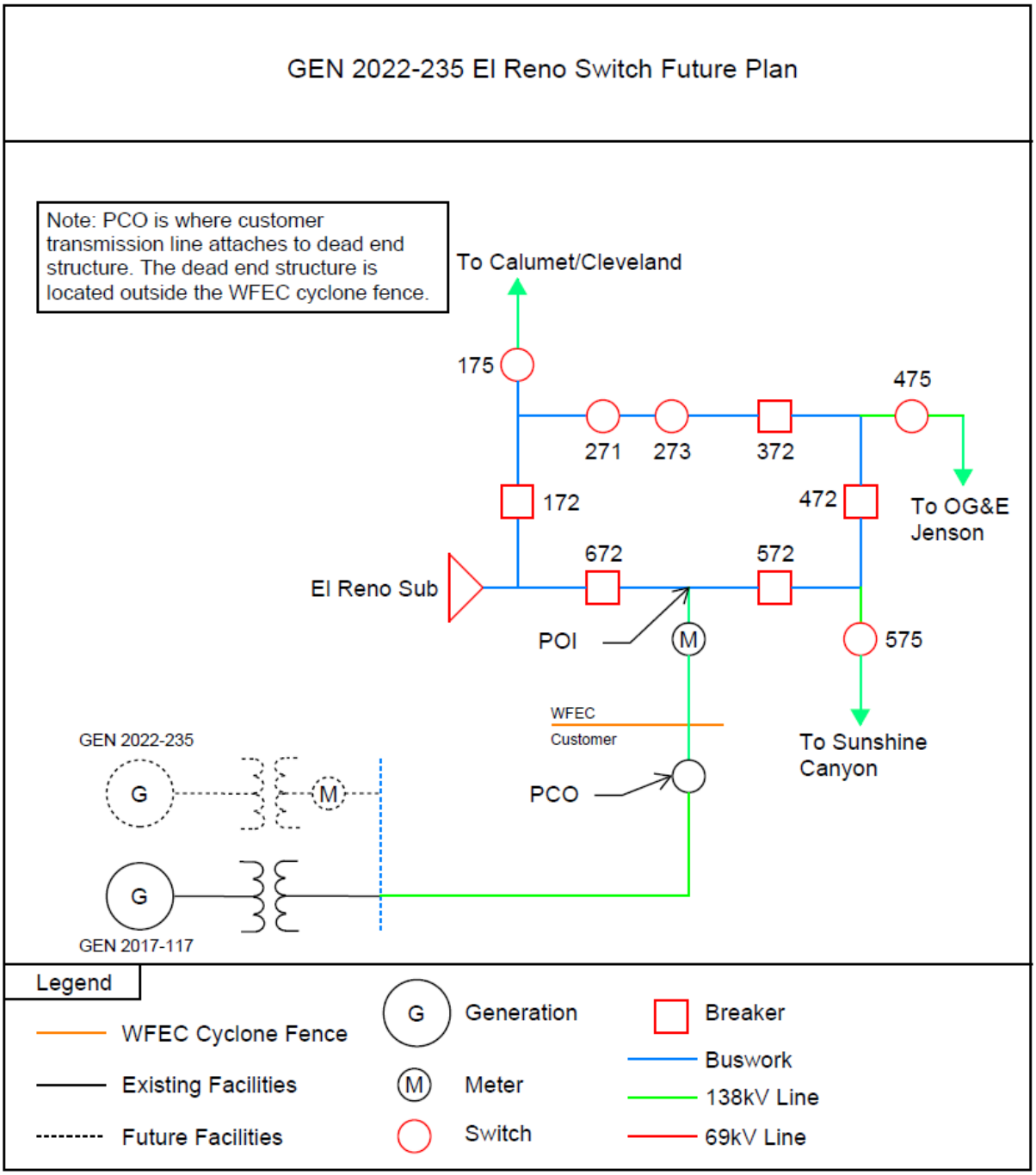

Figure 1: One-line Diagram Facilities for GEN-2022-235

The total cost for the interconnection facilities at POI is estimated at $0.

This facility study does not guarantee the availability of transmission service necessary to deliver additional generation to any specific point inside or outside of the SPP transmission system. The transmission network facilities may not be adequate to deliver any additional generation output to the system. If the customer requests firm transmission service under the SPP open access transmission tariff at a future date, Network Upgrades or other new construction may be required to provide the service requested under the SPP OATT.

Short Circuit Fault Duty Evaluation:

It is standard practice for WFEC to recommend replacing a circuit breaker when the current through the breaker for a potential fault exceeds 100% of its interrupting rating, as determined by the ANSI/IEEE standard C37-010-2016 breaker rating methods. Existing levels of available fault current at the Canadian 138kV station is shown below. As an inverter-based resource (IBR) the maximum fault current contribution is estimated at 1.4 times peak load current of the Inverter during the subtransient period. This equates to an increase in available fault current of approximately 880A at the POI, so no existing breakers are expected to exceed capacity with the proposed interconnection.

WFEC has evaluated the potential maximum fault current in this area and no issues with short circuit duty ratings are expected on existing WFEC breakers with the proposed interconnection of 150MW of battery/storage at El Reno Switch Station.

Table 1: El Reno Switch Station 138kV Breaker Capacity

BUS	BREAKER	DUTY %	DUTY (A)	BKR CAPACITY (A)
El Reno Switch Station 138kV	138kV Breakers (x4) (172,372-572)	28%	11000 (3LG)	40000

Interconnection Cost

Table 2: Transmission Owner Interconnection Facilities

Transmission Owner Interconnection Facilities (TOIF) **UID: 158131**	**Cost Estimate ($)**	**Estimated Lead Time**
WFEC El Reno Switch Interconnection Substation: N/A	**$ 0**	**N/A**

Table 3: Non-Shared Network Upgrades

Non-Shared Network Upgrades Description **UID: 158132**	**Cost Estimate ($)**	**Estimated Lead Time**
WFEC El Reno Switch Interconnection Substation: N/A	**$0**	**N/A**

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FACILITY STUDY FOR NETWORK UPGRADES

as Requested by Southwest Power Pool (SPP)

DISIS-2022-001

November 2025

Summary

The Southwest Power Pool (SPP or Transmission Provider) evaluated the generation facilities requesting to interconnect to Western Farmers Electric Cooperative (WFEC or Transmission Owner) transmission system in the Definitive Interconnection System Impact Study (DISIS-2022-001). The requests for interconnection were placed with SPP in accordance with the Scope of Interconnection Facilities Study GIP Section 8.10 and the Interconnection Facilities Study Procedures in accordance with GIP Section 8.11.

To accommodate the Interconnection Customer's (IC) requests, SPP identified multiple network upgrades required as part of the DISIS study results. WFEC performed this Facility Study for the Network Upgrades. The table below identifies the specific transmission elements impacted and addressed in this Facility Study along with the projected project duration for completing the specific upgrade.

Table 1: Cost Estimate for Network Upgrades

Upgrade Name	SCERT UID	TO Estimated Cost	Project Time Estimate (months)
Twin Lakes Junction to Twin Lakes Switch Station 138kV Line Rebuild	170699	$6,795,000	36
Caney Creek to Texoma Junction 138kV Line Rebuild	170700	$500,000	36
Jensen to El Reno Switch Station 138kV Line Rebuild	170703	$1,863,000	36
Crescent to Twin Lakes Switch Station 138kV Line Rebuild	170706	$2,826,000	36
Kiersey to Colbert 138kV Line Rebuild	170708	$8,001,000	36

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Description of Network Upgrades

Table 2: Twin Lakes Switch Station – Twin Lakes Junction & Twin Lakes Switch Station – OG&E Crescent Cost Estimate

Shared Network Upgrades Description UID: 170699	Cost Estimate ($)	Estimated Lead Time
Twin Lakes Switch – Twin Lakes Junction 138kV Line **Rebuild:** Rebuild 7.55 miles of 138kV transmission from Twin Lakes Switch to Twin Lakes Junction.	Engineering: $ 339,750.00 ROW: $ 339,750.00 Material: $ 3,057,750.00 Construction: $ 3,057,750.00 **TOTAL: $ 6,795,000.00**	**36 Months**

Shared Network Upgrades Description UID: 170706	Cost Estimate ($)	Estimated Lead Time
WFEC Twin Lakes SW – OG&E Cresent 138kV Line **Rebuild:** Rebuild 3.14 miles of 138kV transmission from WFEC Twin Lakes Switch to OG&E Cresent.	Engineering: $ 141,300.00 ROW: $ 141,300.00 Material: $ 1,271,700.00 Construction: $ 1,271,700.00 **TOTAL: $ 2,826,000.00**	**36 Months**

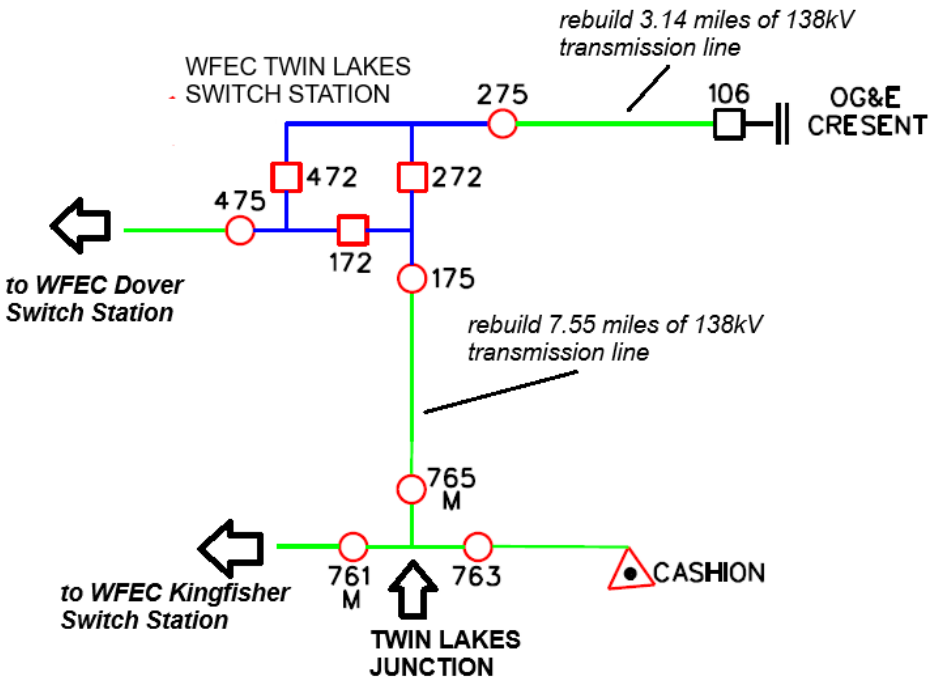

Figure 1: One-line Diagram: Twin Lakes Switch Station – OG&E Crescent 138kV & Twin Lakes Switch Station to Twin Lakes Junction

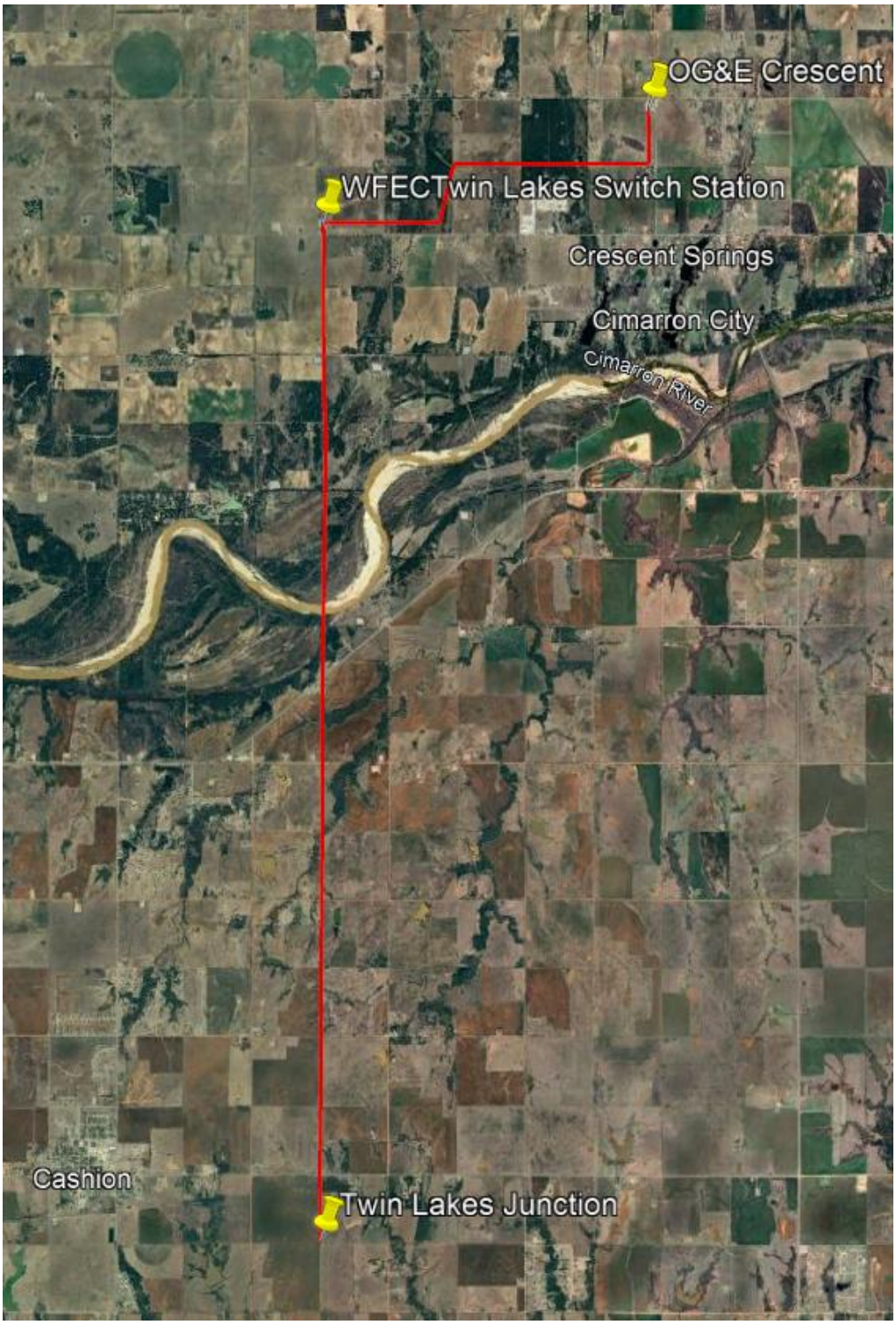

Figure 2: Geographic: Twin Lakes Switch Station – OG&E Crescent 138kV & Twin Lakes Switch Station to Twin Lakes Junction

Table 3: Texoma Junction – OG&E Caney Creek Cost Estimate

Shared Network Upgrades Description UID: 170703	Cost Estimate ($)	Estimated Lead Time
WFEC Texoma Junction – OG&E Caney Creek 138kV Line Rebuild: Rebuild 0.17 miles of 138kV transmission from WFEC Texoma Junction to OG&E Caney Creek.	Engineering: $ 25,000 ROW: $ 25,000 Material: $ 225,000 Construction: $ 225,000 **TOTAL: $ 500,000**	**36 Months**

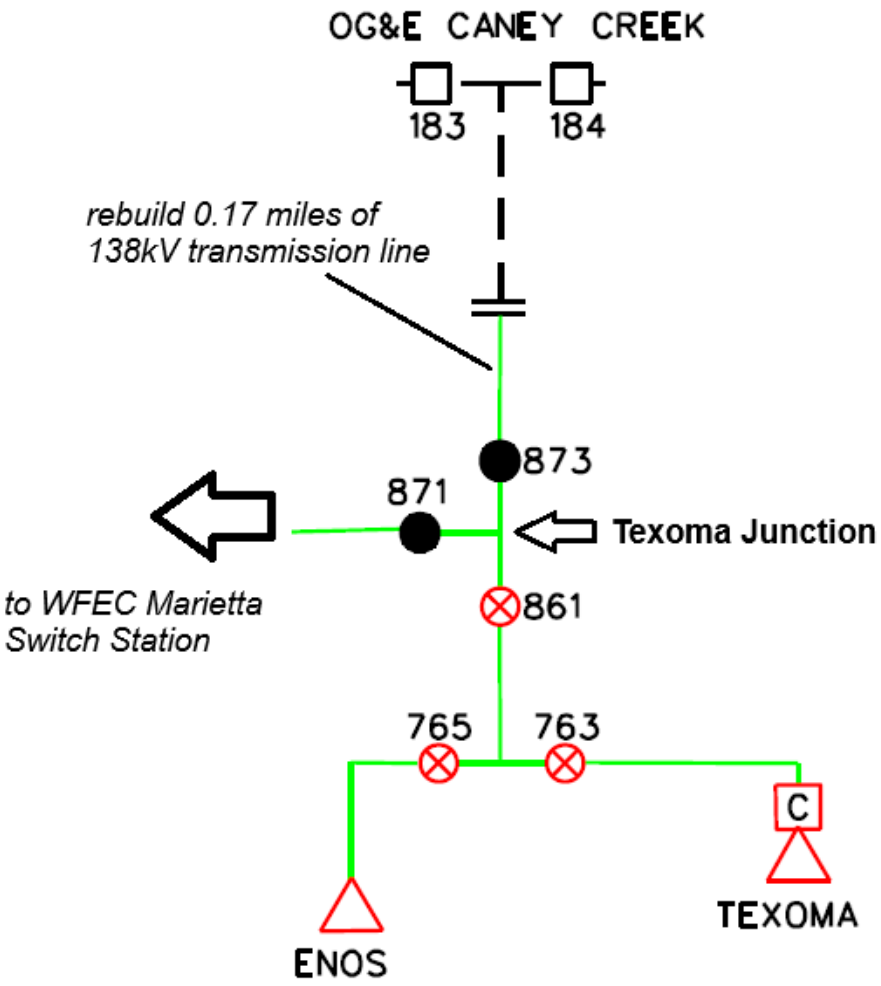

Figure 3: One-line Diagram: Texoma Junction – OG&E Caney Creek 138kV

Figure 4: Geographic: Texoma Junction – OG&E Caney Creek 138kV

Table 4: El Reno Switch Station – OG&E Jensen Cost Estimate

Shared Network Upgrades Description UID: 170703	Cost Estimate ($)	Estimated Lead Time
WFEC El Reno SW – OG&E Jensen 138kV Line Rebuild: Rebuild 2.07 miles of 138kV transmission from WFEC El Reno Switch to OG&E Jensen.	Engineering: $ 93,150.00 ROW: $ 93,150.00 Material: $ 838,350.00 Construction: $ 838,350.00 **TOTAL: $1,863,000.00**	**36 Months**

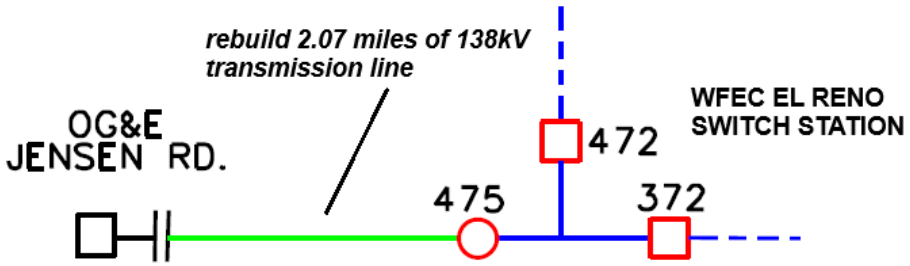

Figure 5: One-line Diagram: El Reno Switch Station – OG&E Jensen 138kV

Figure 6: Geographic: El Reno Switch Station – OG&E Jensen 138kV

Table 5: Texoma Junction – OG&E Caney Creek Cost Estimate

Shared Network Upgrades Description UID: 170708	Cost Estimate ($)	Estimated Lead Time
Kersey Substation – Colbert Substation 138kV Line Rebuild: Rebuild 8.89 miles of 138kV transmission from Kersey Substation to Colbert Substation.	Engineering: $ 400,050.00 ROW: $ 400,050.00 Material: $ 3,600,450.00 Construction: $ 3,600,450.00 **TOTAL: $ 8,001,000.00**	**36 Months**

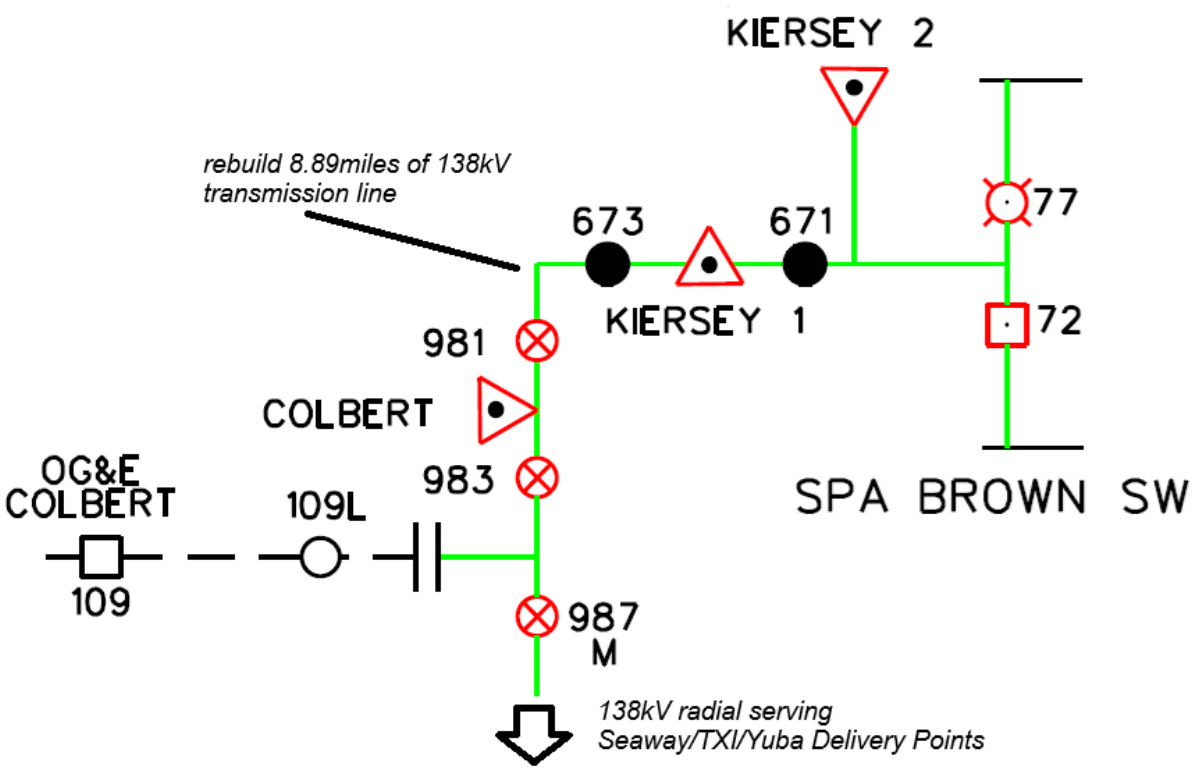

Figure 7: One-line Diagram: Kiersey Substation – Colbert Substation 138kV

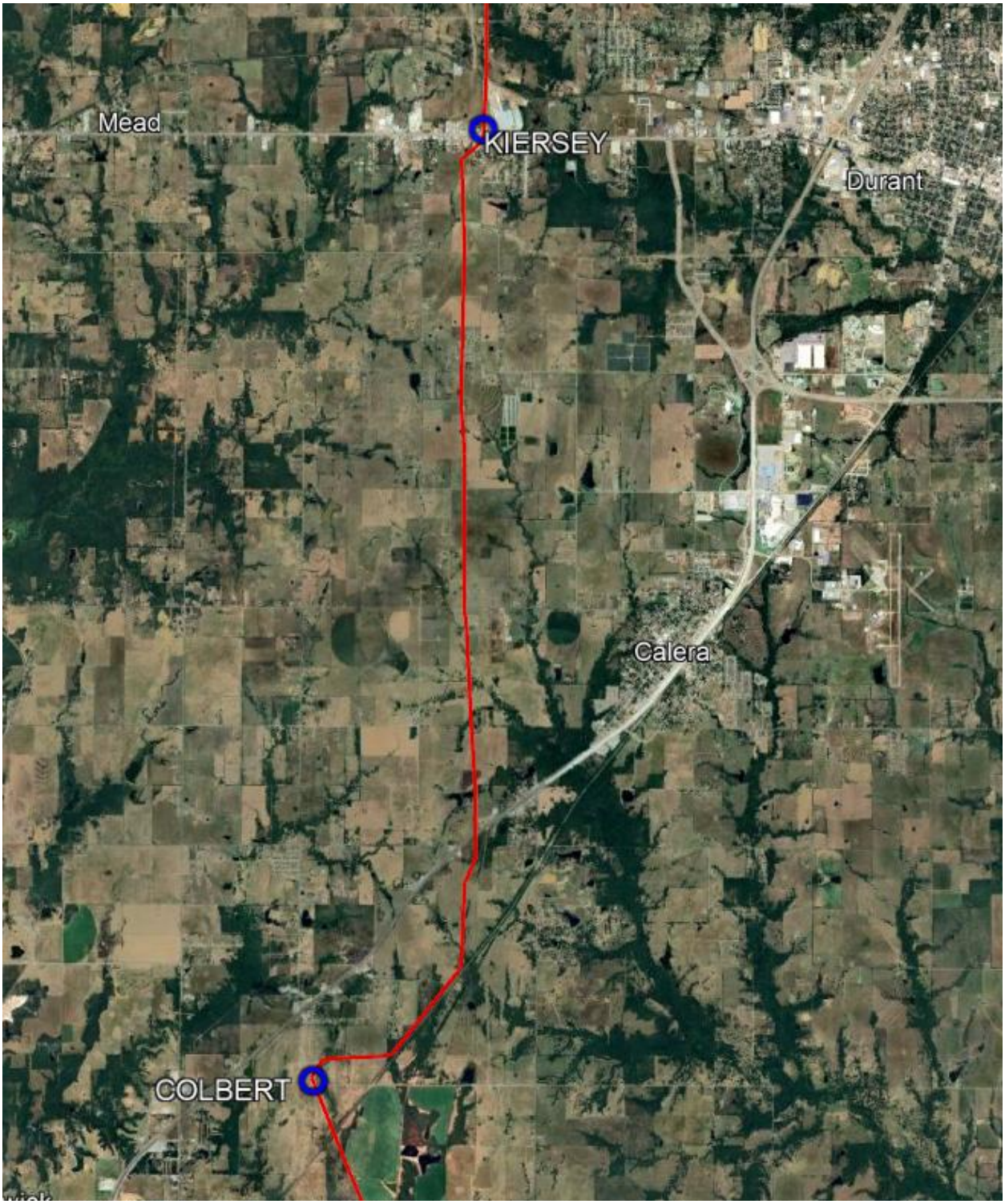

Figure 8: Geographic: Kiersey Substation – Colbert Substation 138kV

FACILITY STUDY

for

DISIS-2022-001 Network Upgrade Request UID: 170698

Line Rebuild between WOODWRD4 TO WINDFARM4 138Kv Line 1
Harper County
Oklahoma

November 5th, 2025

Benjamin Sasu.
Senior Transmission Planning Engineer
OG&E Electric Services

Summary

Pursuant to the tariff and at the request of the Southwest Power Pool (SPP), Oklahoma Gas and Electric (OG&E) performed the following Facility Study to satisfy the Facility Study Agreement executed by the requesting customer for SPP DISIS-2022-001 UID 170698. The request for interconnection was placed with SPP in accordance with SPP's Open Access Transmission Tariff. The requirement for network upgrades and rebuilding line between Woodward District to Windfarm Switching Station to a minimum of 478MVA to be established by UID 170698. The total cost for OKGE to complete the necessary work is estimated at **$18,105,000**

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Introduction

The Southwest Power Pool has requested a Facility Study for the purpose of rebuilding the 138kV line transmission line between Woodward District to Windfarm Switching Station Substations within the service territory of OKGE Electric services (OKGE) in Harper County Oklahoma. The cost for network upgrades and rebuilding the line, and associated equipment's at WOODWRD4 Substation and WINDFARM4 Substation is estimated at **$18,105,000.**

Network Constraints in the Southwest Public Service (SPS), OKGE and Western Farmers Electric Cooperative (WFEC) systems may be verified with a transmission service request and associated studies.

Other Network Constraints in the American Electric Power West (AEPW), Southwest Public Service (SPS), OKGE and Western Farmers Electric Cooperative (WFEC) systems may be verified with a transmission service request and associated studies.

Interconnection Facilities

The primary objective of this study is to identify attachment facilities. The requirements for rebuilding the 138kV line consists of replacing existing transmission poles and installing 12 miles of transmission conductor. This 138kV rebuild shall be constructed and maintained by OKGE..

The total cost for OKGE to complete the work is estimated at **$18,105,000.**

This Facility Study does not guarantee the availability of transmission service necessary to deliver the additional generation to any specific point inside or outside the Southwest Power Pool (SPP) transmission system. The transmission network facilities may not be adequate to deliver the additional generation output to the transmission system. If the customer requests firm transmission service under the SPP Open Access Transmission Tariff at a future date, Network Upgrades or other new construction may be required to provide the service requested under the SPP OATT.

The cost of network upgrades and rebuilding the 12 miles, 138kV line of the OKGE transmission system is listed in Table 1.

Short Circuit Fault Duty Evaluation

It is standard practice for OG&E to recommend replacing a circuit breaker when the current through the breaker for a fault exceeds 100% of its interrupting rating with re-closer de-rating applied, as determined by the ANSI/IEEE C37.5-1979, C37.010-1979 & C37.04-1979 breaker rating methods.

For this line rebuild, no breakers were found to exceed their interrupting capability after the addition of the new equipment. OG&E found no breakers that exceeded their interrupting capabilities on their system. Therefore, there is no short circuit upgrade costs associated with UID 170698 interconnection

Table 1: Required Interconnection Network Upgrade Facilities

Facility	ESTIMATED COST (2025 DOLLARS)
Lead Time	36 months
OKGE – **Interconnection Facilities-**	$0
OKGE – **Network Upgrades-** Rebuild 13.7 miles of 138kV transmission line from Cottonwood Creek to Crescent Substation	**$18,105,000**
OKGE - Right-of-Way for 138kV terminal addition	No Additional ROW
Total	**$18,105,000**

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November 5th, 2025

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November 5th, 2025

Woodward District to Windfarm Switching Station