wfec
western farmers
electric cooperative
A Touchstone Energy® Cooperative

INTERCONNECTION FACILITY STUDY

for

Generation Interconnection Request 2022-104

113MW Solar Generation Interconnection
in Bryan County, OK.

November 2025

SUMMARY

Pursuant to 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-2022-104. 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 requirements for interconnection consist of building a new 138kV station at the POI with breakers and relaying operating as a 3-breaker ring bus. The total cost for WFEC to accommodate the interconnection request at the 138kV POI is $9,000,000.

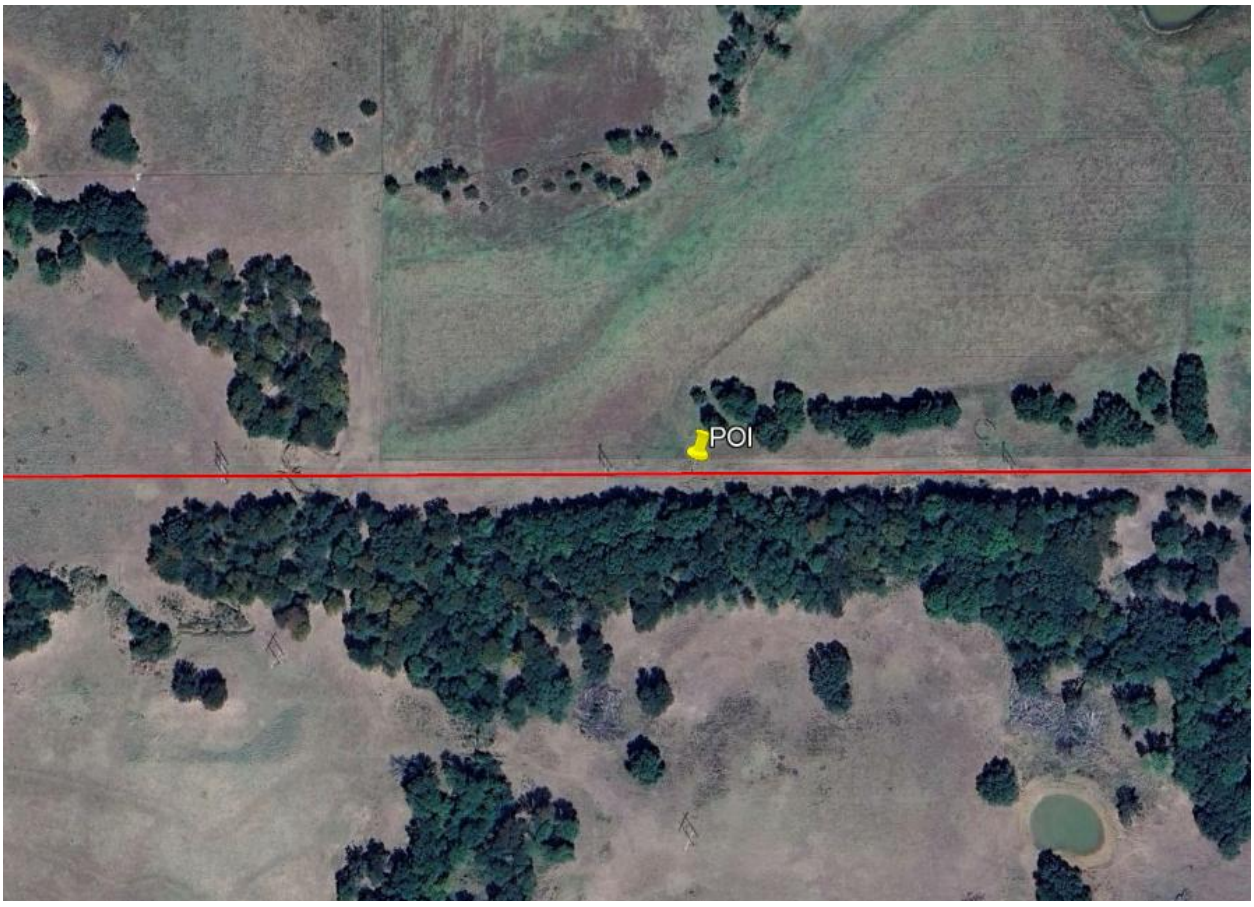

Table of Contents

Introduction

The Southwest Power Pool has requested a facility Study for the purpose of interconnecting 113MW of Battery/Storage within the service territory of WFEC in Bryan County, Oklahoma. The proposed 138kV POI (34° 4'48.63"N, 96°28'22.44"W) is in between Brown Switch Station and South Coleman Junction on the Brown – Hugo 138kV transmission circuit.

The cost for adding a new 138kV Switching Station (WFEC Silo Switch Station) at the POI with breakers and relaying to is estimated at $9,000,000.

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-2022-104.

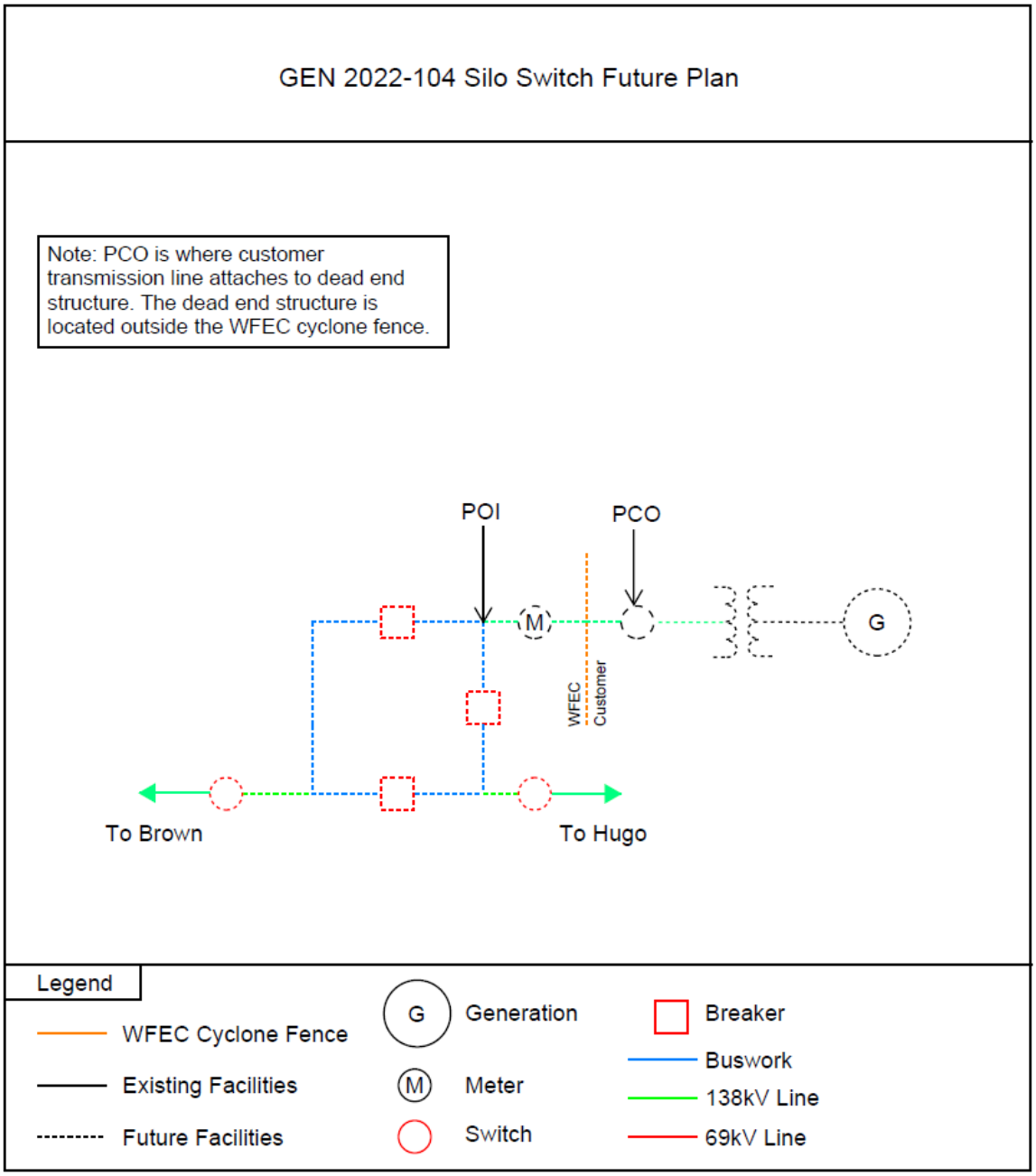

Figure 1: One-line Diagram Facilities for GEN-2022-104

To accommodate an interconnection for GEN 2022-104 WFEC will construct a new 138kV three-breaker ring bus, equipping a terminal for the following three lines: SWPA Brown 138kV, WFEC Hugo 138kV, and the customer's GEN-2022-104 138kV interconnecting transmission line. The customer will construct a new 138kV transmission line from their collector sub to the point of demarcation. WFEC will require the customer to install OPGW for communications from Customer's collector sub to WFEC's switch station.

The total cost for the interconnection facilities at POI is estimated at $9,000,000. This cost does not include the construction of the 138kV line from the customer substation to the point of demarcation at the edge of WFEC's property. The customer is responsible for this 138kV line up to the point of interconnection.

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 nearby Brown 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 660A at the POI (Silo Switch Station), so no 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 113MW of solar generation on the Brown – South Coleman Junction 138kV transmission line.

Table 1: Brown Switch Station 138kV Breaker Capacity

BUS	BREAKER	DUTY %	DUTY (A)	BKR CAPACITY (A)
Brown 138kV	138kV Breakers (x3) (12, 62, 72)	36%	22500 (2LG)	40000

Interconnection Cost

Table 2: Transmission Owner Interconnection Facilities

Transmission Owner Interconnection Facilities (TOIF) **UID: 158080**	**Cost Estimate ($)**	**Estimated Lead Time**
WFEC Silo Switch Interconnection Substation: Construct one 138kV line terminal, line switches, dead end structures, line relaying, communications, revenue metering, line arrestors, and all associated equipment and facilities necessary to accept transmission line from Interconnection Customer's Generating Facility.	Engineering: $ 100,000 ROW: $ 100,000 Material: $ 900,000 Construction: $ 900,000 **TOTAL: $ 2,000,000**	**60 Months**

Table 3: Non-Shared Network Upgrades

Non-Shared Network Upgrades Description **UID: 158081**	**Cost Estimate ($)**	**Estimated Lead Time**
WFEC Silo Switch Interconnection Substation: Construct 138kV three-terminal ring bus, 2000A continuous rating, 40kA short circuit rating, breakers (3), terminate existing WFEC Brown-Hugo 138kV transmission line, switches, foundations, overhead static, ground grid, gravel, grading, fence, acquire land, line relaying and communications.	Engineering: $ 350,000 ROW: $ 350,000 Material: $ 3,150,000 Construction: $ 3,150,000 **TOTAL: $ 7,000,000**	**60 Months**

wfec
western farmers
electric cooperative
A Touchstone Energy® Cooperative

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

Table of Contents

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**

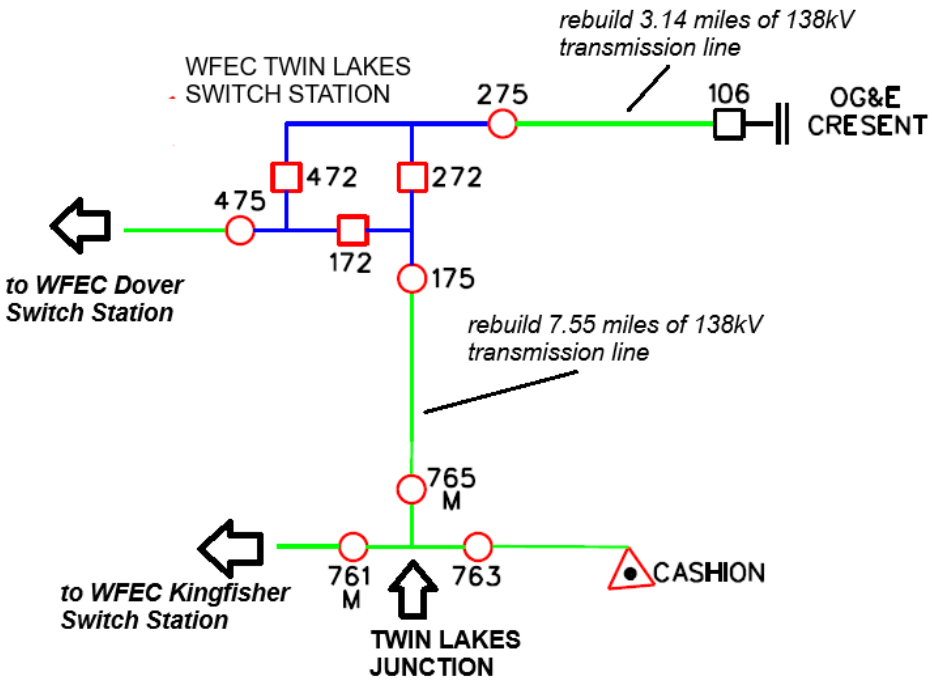

Figure 1: One-line Diagram: Twin Lakes Switch Station – OG&E Crescent 138kV & Twin Lakes Switch Station to Twin Lakes Junction

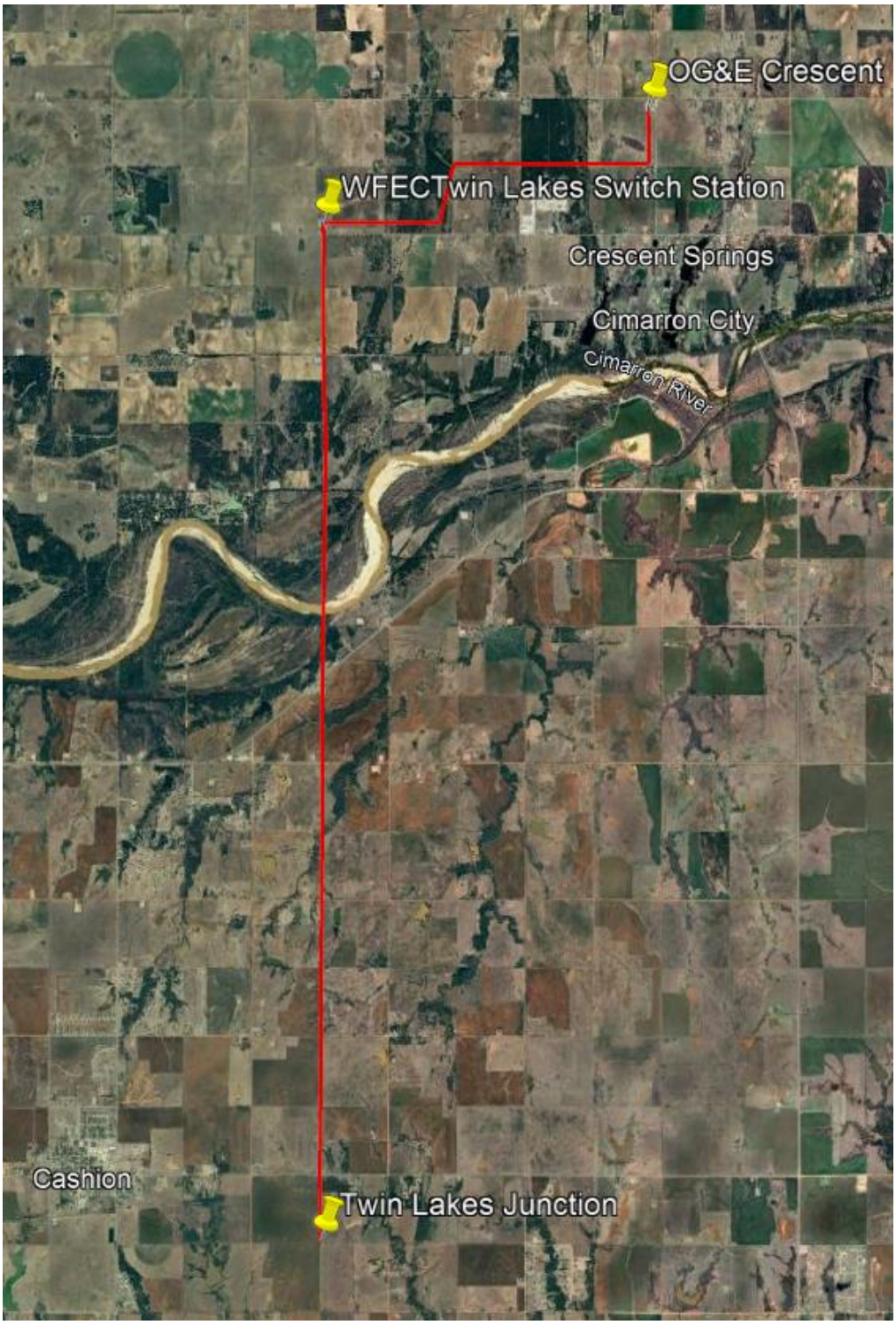

Figure 2: Geographic: Twin Lakes Switch Station – OG&E Crescent 138kV & Twin Lakes Switch Station to Twin Lakes Junction

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**

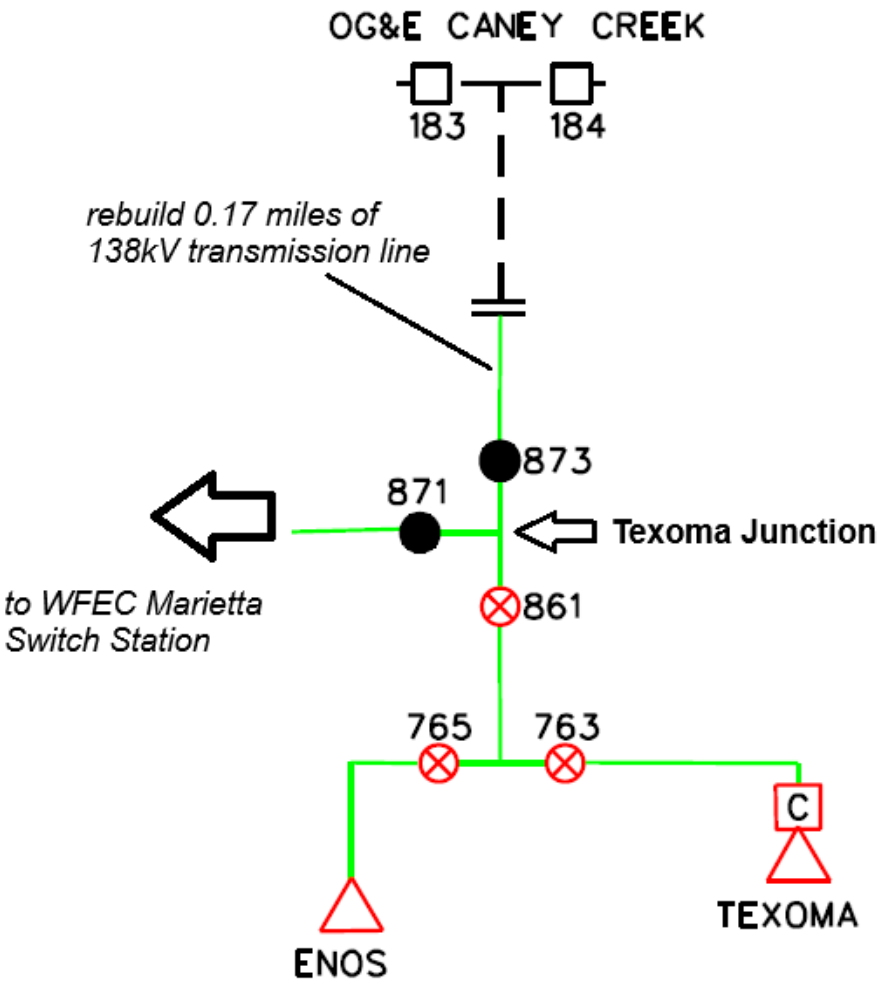

Figure 3: One-line Diagram: Texoma Junction – OG&E Caney Creek 138kV

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**

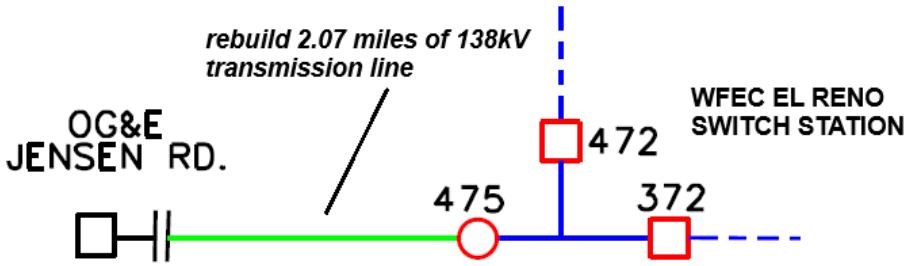

Figure 5: One-line Diagram: El Reno Switch Station – OG&E Jensen 138kV

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**

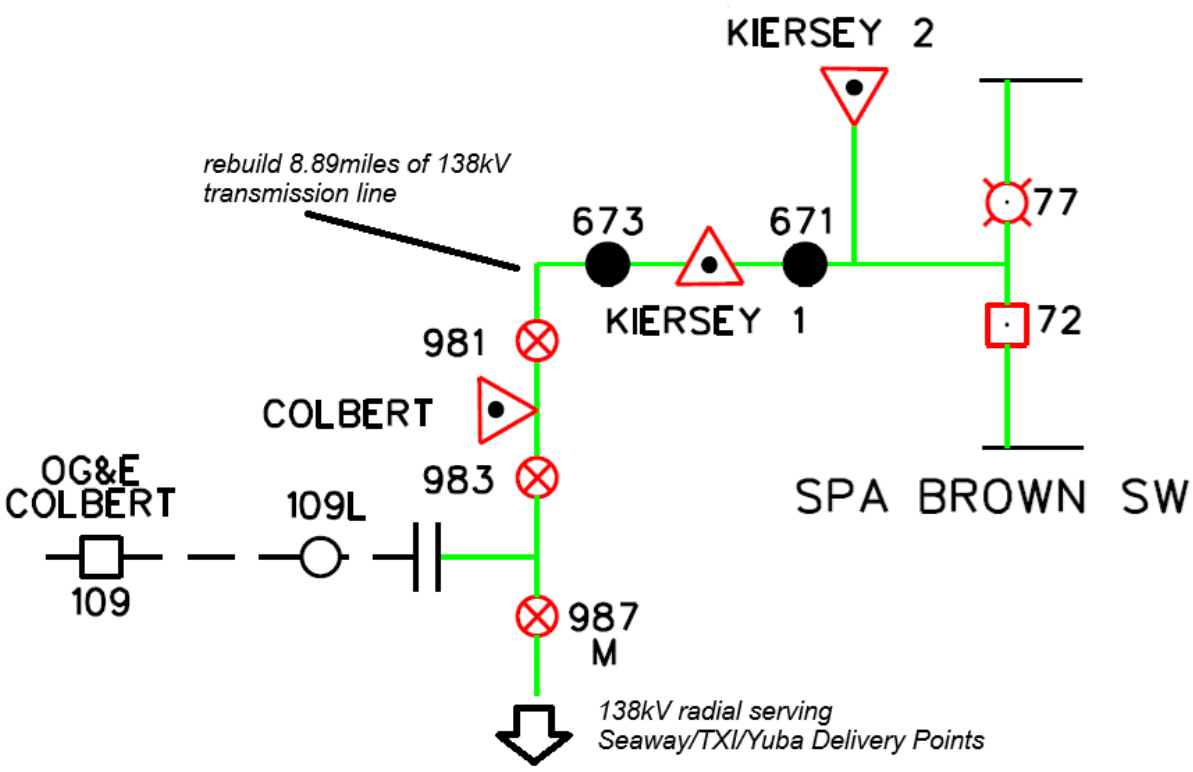

Figure 7: One-line Diagram: Kiersey Substation – Colbert Substation 138kV

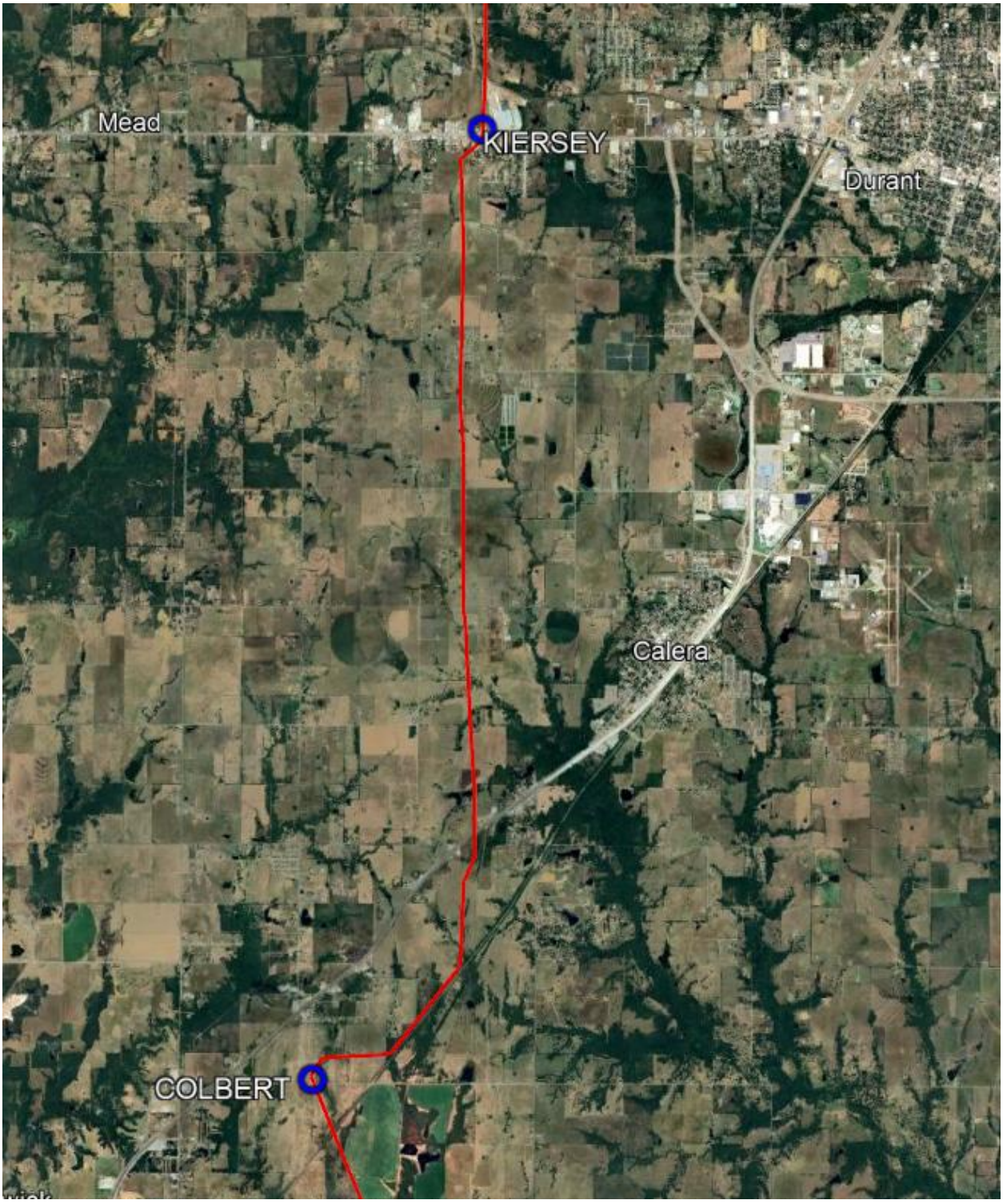

Figure 8: Geographic: Kiersey Substation – Colbert Substation 138kV