



Interconnection Facilities Study

Costs associated with DISIS-2022-001 GEN-2022-013/024

October 2025

Introduction

This report summarizes the scope of the Interconnection Facilities Analysis for Network Upgrade(s) to determine costs related to the addition of the SPP-GI DISIS-2022-001 Interconnection Request(s). Evergy, as a TO, is receiving an unprecedented amount of GI interconnect requests. The cost estimates and interconnect information supplied are based on current system configuration. There are many cases of multiple GI's requesting POIs at the same substation. Ongoing changes in Evergy's transmission system configuration could affect the required system upgrades and costs necessary to meet any particular GI interconnect request in the future.

Southwest Power Pool Generation Interconnection Request:

Per the SPP Generator Interconnection Procedures (GIP), SPP has requested that Evergy perform an Interconnection Facilities Study (IFS) for Network Upgrade(s) 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 for the following Interconnection Request(s):

Upgrade Type	UID	Upgrade Name	DISIS Cost Estimate	DISIS Lead Time
Interconnection	158376	Tap of Neosho - LaCygne 345 kV Line GEN-2022013 Interconnection (TOIF) (EKC)	\$ 1,898,669.00	56 Months
Interconnection	158378	Tap of Neosho - LaCygne 345 kV Line Interconnection (DISIS-2022-001) (EKC)	\$ 31,493,296.00	56 Months

Tap of Neosho - LaCygne 345 kV Line GEN-2022-013 Interconnection (TOIF) (EKC)

345kV Substation

TOIF for accommodating Savannah Solar GEN-2022-013 (300MW of Solar) at a greenfield 345kV Substation on the Neosho - LaCygne 345 kV line. This estimate is the cost associated with the Transmission Owner Interconnection Facilities for a terminal at a new substation on the Neosho - LaCygne 345 kV line for GEN-2022-013. UID 158376

Total Cost

The total cost estimate for this TOIF is:

\$	0 Transmission Line
\$	1,737,716 Substation
\$	5,679 AFUDC
\$	155,274 Contingency
\$	1,898,669 Total

This estimate is accurate to +/- twenty (20) percent, based on current prices, in accordance with Attachment A of Appendix 4 of the Interconnection Facilities Study Agreement. However, recent cost fluctuations in materials are very significant and the accuracy of this estimate at the time of actual settings cannot be assured.

Time Estimate

Time estimates are based on current version of the project schedule and some processes of each category run concurrently.

Engineering Time	48-56	Months
Procurement Time	48-56	Months
Construction Time	48-56	Months

Total			Project Length
	48-56	Months	

Tap of Neosho - LaCygne 345 kV Line Interconnection (DISIS-2022-001) **(EKC)**

345kV Substation

Network Upgrades to construct a greenfield 345kV ring bus substation on the NeoshoLaCygne 345kV line to accommodate Savannah Solar GEN-2022-013/024 (300MW of Solar and 200MW of Battery/Storage). The transmission line estimate assumes that the substation will be located directly adjacent to the existing line, with no additional easements required. UID 158378

Total Cost

The total cost estimate for this Network Upgrade is:

\$	1,768,500	Transmission Line
\$	26,725,486	Substation
\$	94,198	AFUDC
\$	2,905,112	Contingency
\$	31,493,296	Total

This estimate is accurate to +/- twenty (20) percent, based on current prices, in accordance with Attachment A of Appendix 4 of the Interconnection Facilities Study Agreement. However, recent cost fluctuations in materials are very significant and the accuracy of this estimate at the time of actual settings cannot be assured.

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Engineering Time	48-56	Months
Procurement Time	48-56	Months
Construction Time	48-56	Months

Total			Project Length
	48-56	Months	

Figure 1 – Neosho-LaCygne 345kV Line





Generation Interconnection Facilities Study

for

DISIS-2022-001 Network Upgrades

UID 170693

**“Rebuild the RIV452 5 to G20-079-TAP 161kV Line 1
(EMDE)”**

Created 10/28/2025

Introduction

At the request of Southwest Power Pool (SPP), The Empire District Electric Company (d/b/a Liberty) has compiled the following Facility Study for SPP to comply with the DISIS-2022-001 Network Upgrade study results.

Project Description

DISIS-2022-001 UID 170693 proposes to rebuild the 161kV line from Riverton Rams Sub 452 to the soon-to-be-installed G20-079 substation (Rainbow Springs) in southeast Kansas,

including replacing any necessary terminal equipment, to meet a required minimum 650 MVA capacity in all seasons.

Liberty's Scope of Work

Liberty will rebuild and reconductor 5.47 miles of the 161kV line from bundled 795 ACSR to bundled 795 ACSS shown in Figure 1. Additionally, Liberty will replace two (2) 2000A circuit breakers and five (5) 2000A ganged disconnect switches with 3000A equipment at Riverton Rams Sub 452 shown in Figure 2, as well as replace two (2) 2000A circuit breakers and (5) 2000A ganged disconnect switches with 3000A equipment at the G20-079 (Rainbow Springs) substation.

Liberty reserves the right to specify the final acceptable configuration considering design practices, future expansion, and compliance requirements.

Interconnection Estimated Costs and Lead-Times

Total Cost & Lead-time	
Network Upgrades (NU) - Rebuild 5.47 miles of 161kV line with double-795 ACSS; (4) 161kV, 3000A breakers; (10) 161kV, 3000A switches	
Total	\$9,770,036
Lead time	36 Months

Table 1 – Cost Estimate

Figure 1 – Impacted Transmission Line and Substations

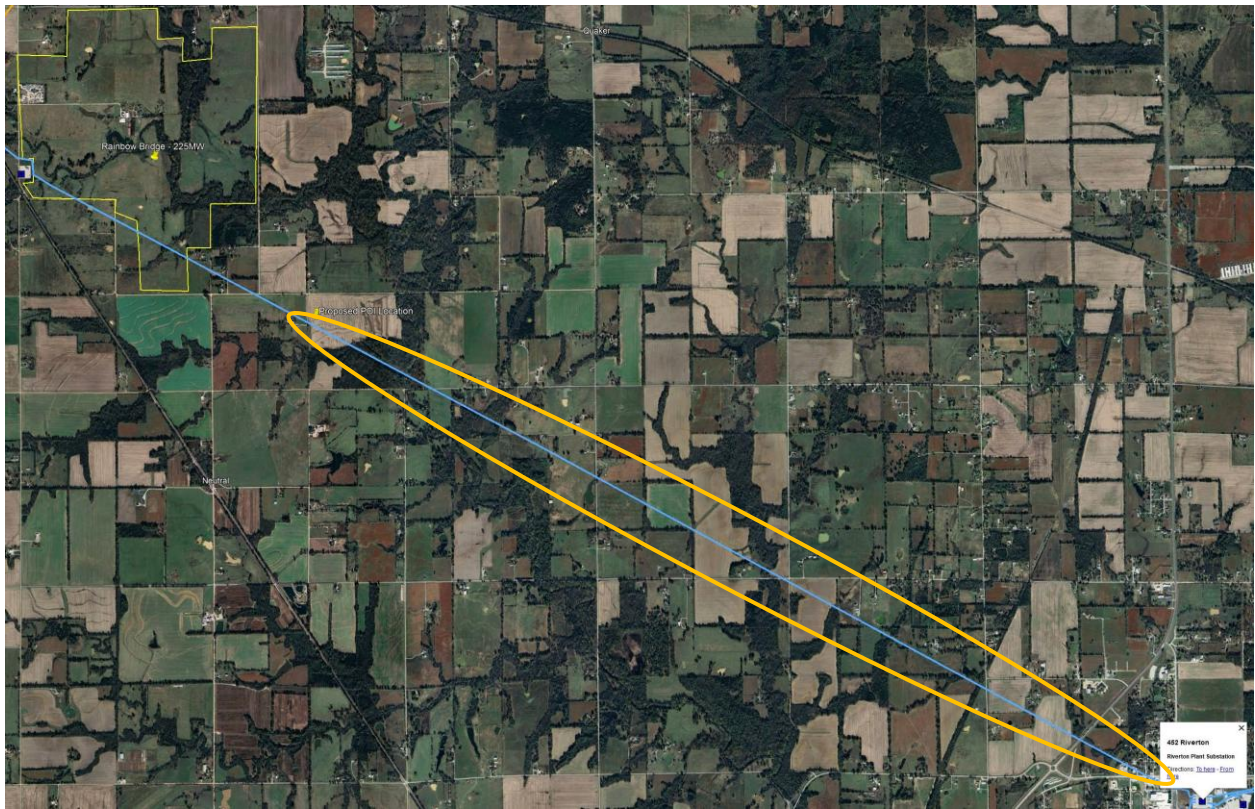
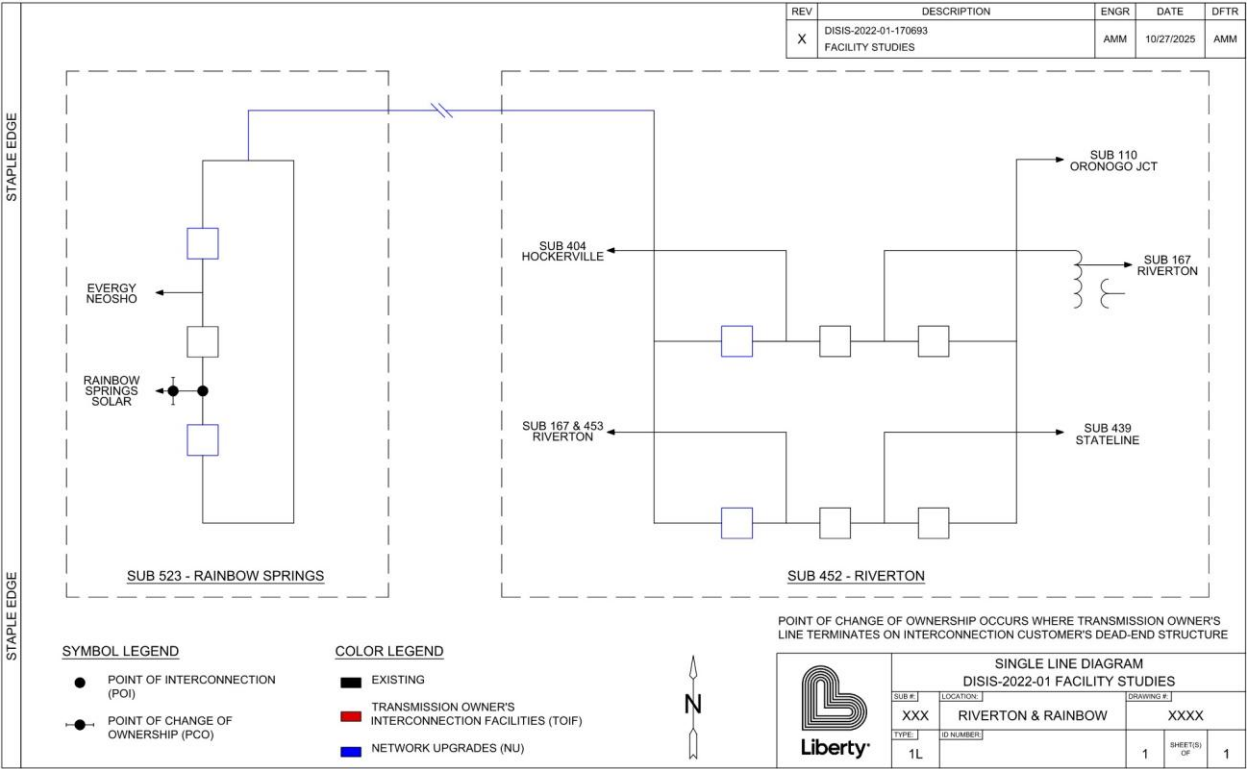


Figure 2 – Preliminary One-Line for Riverton Sub 452 and Rainbow Springs Sub 523





Interconnection Facilities Study

Costs associated with DISIS-2022-001 Restudy #2 Reroute LaCygne – Neosho 345kV line to tap the exiting GEN-2020-007 tap switching station June 2026

Introduction

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Southwest Power Pool Generation Interconnection Request:

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Upgrade Type	UID	Upgrade Name	DISIS Cost Estimate	DISIS Lead Time
Current Study	172089	Reroute LaCygne – Neosho 345kV line to tap the exiting GEN-2020-007 tap switching station	\$ 33,191,343.00	54 Months

Reroute LaCygne – Neosho 345kV line to tap the exiting GEN-2020-007 tap switching station

345kV Substation

Network Upgrades to convert GEN-2020-007 tap Switching Station 345kV from a ring bus to a breaker-and-a-half (BAAH) configuration to accommodate the lines from LaCygne and Neosho. Expand the fence to the west and add two 345kV rungs to create two new 345kV line terminals, with line entering from the south. UID 172089

345kV Transmission

Network Upgrades to construct a 2 miles double-circuit 345kV line by cutting into the existing LaCygne-Neosho 345kV transmission line and bringing it into the future GEN2020-007 tap Switching Station 345kV. Assuming 3000A conductor for this portion of the project and installation of dual OPGW. The entire line route is located on a greenfield private easement. Road ROW along Yancey Road can be utilized for blowout, but no structures are to be installed within road ROW. Current estimate assumes for a 200ft wide transmission easement. Rebuild 2.5 miles of single circuit 345kV transmission line from the new in/out cut in point to LaCygne. Estimate assumes that existing easements are sufficient. UID 172089

Total Cost

The total cost estimate for this Network Upgrade is:

\$	15,032,250	Transmission Line
\$	16,162,517	Substation
\$	93,281	AFUDC
\$	1,903,294	Contingency
\$	33,191,343	Total

This estimate is accurate to +/- twenty (20) percent, based on current prices, in accordance with Attachment A of Appendix 4 of the Interconnection Facilities Study Agreement. However, recent cost fluctuations in materials are very significant and the accuracy of this estimate at the time of actual settings cannot be assured.

Time Estimate

Time estimates are based on current version of the project schedule and some processes of each category run concurrently.

Engineering Time	54	Months
Procurement Time	54	Months
Construction Time	54	Months
Total Project Length	54	Months

Figure 1 – LaCygne - Neosho 345kV

