INTERCONNECTION FACILITIES STUDY REPORT

GEN-2025-SR6

Published June 2026

By SPP Generator Interconnections Special Studies Dept.

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SUMMARY

INTRODUCTION

This Interconnection Facilities Study (IFS) for Interconnection Request GEN-2025-SR6 is for a 200 MW generating facility located in Grady County, OK. The Interconnection Request was studied in the Surplus Impact Study for NRIS. The Interconnection Customer's requested in-service date is 08/03/2026.

The interconnecting Transmission Owner, Oklahoma Gas & Electric (OG&E), performed a detailed IFS at the request of SPP. The full report is included in Appendix A. SPP has determined that full Interconnection Service will be available after the assigned Transmission Owner Interconnection Facilities (TOIF), and Non-Shared Network Upgrades that are required for full interconnection service are completed.

The primary objective of the IFS is to identify necessary Transmission Owner Interconnection Facilities, other direct assigned upgrades, cost estimates, and associated upgrade lead times needed to grant the requested Interconnection Service.

PHASE(S) OF INTERCONNECTION SERVICE

It is not expected that Interconnection Service will occur in phases. However, full Interconnection Service will not be available until all Interconnection Facilities and Network Upgrade(s) can be placed in service.

COMPENSATION FOR AMOUNTS ADVANCED FOR NETWORK UPGRADE(S)

FERC Order ER20-1687-000 eliminated the use of Attachment Z2 revenue crediting as an option for compensation. The Incremental Long Term Congestion Right (ILTCR) process will be the sole process to compensate upgrade sponsors as of July 1st, 2020.

INTERCONNECTION CUSTOMER INTERCONNECTION FACILITIES

The Generating Facility is proposed to consist of fifty-five (55) Power Electronics FP4200M Battery Energy Storage System (BESS) inverters rated at 4.2 MVA for a total generating capacity of 200 MW. The sum of the output from the combined generation of GEN-2017-150 and GEN-2025-SR6 are limited at the Point of Interconnection to 250 MW.

The Interconnection Customer's Interconnection Facilities to be designed, procured, constructed, installed, maintained, and owned by the Interconnection Customer at its sole expense include:

- 34.5 kV underground cable collection circuits;
- The project will connect to the existing main collector substation and share the main power transformer to connect to the Point of Interconnection (POI) at the 345 kV bus at the existing Transmission Owner substation (Minco 345 kV) that is owned and maintained by Transmission Owner;
- All transmission facilities required to connect the Interconnection Customer's substation to the POI;
- Equipment at the Interconnection Customer's substation necessary to maintain a composite power delivery at continuous rated power output at the high-side of the generator substation at a power factor within the range of 95% lagging and 95% leading in accordance with Federal Energy Regulatory Commission (FERC) Order 827. Additionally, needed approximately 31.5 Mvars[1] of reactors to compensate for injection of reactive power into the transmission system under no/reduced generating conditions for both GEN-2017-150 and GEN-2025-SR6. The Interconnection Customer may use inverter manufacturing options for providing reactive power under no/reduced generation conditions. The Interconnection Customer will be required to provide documentation and design specifications demonstrating how the requirements are met; and,
- All necessary relay, protection, control and communication systems required to protect Interconnection Customer's Interconnection Facilities and Generating Facilities and coordinate with Transmission Owner's relay, protection, control and communication systems.

[1] This approximate minimum reactor amount is needed for the current configuration of GEN-2025-SR6 as studied in the Surplus Impact Study.

TRANSMISSION OWNER INTERCONNECTION FACILITIES AND NON-SHARED NETWORK UPGRADE(S)

To facilitate interconnection, the interconnecting Transmission Owner will perform work as shown below necessary for the acceptance of the Interconnection Customer's Interconnection Facilities.

Table 1 and **Table 2** list the Interconnection Customer's estimated cost responsibility for Transmission Owner Interconnection Facilities (TOIF) and Non-Shared Network Upgrade(s) and provides an estimated lead time for completion of construction. The estimated lead time begins when the Generator Interconnection Agreement has been fully executed.

Table 1: Transmission Owner Interconnection Facilities (TOIF)

Transmission Owner Interconnection Facilities (TOIF)	Total Cost Estimate ($)	Allocated Percent (%)	Allocated Cost Estimate ($)
Transmission Owner's Interconnection (TOIF): Add B2BVPN for each meter that is used to calculate the energy for Battery/Storage generating facility. **Estimated Lead Time: 6 Months**	$15,000	100%	$15,000
Total	**$15,000**		**$15,000**

Table 2: Non-Shared Network Upgrade(s)

Non-Shared Network Upgrades Description	ILTCR	Total Cost Estimate ($)	Allocated Percent (%)	Allocated Cost Estimate ($)
None		$0	100.00%	$0
Total		**$ 0**		**$ 0**

CONCLUSION

After all Interconnection Facilities and Network Upgrades have been placed into service, Interconnection Service for 200 MW can be granted. Full Interconnection Service will be delayed until the TOIF, and Non-Shared NU that are required for full interconnection service are completed. The Interconnection Customer's estimated cost responsibility for full interconnection service is summarized in the table below.

Table 3: Cost Summary

Description	Allocated Cost Estimate
Transmission Owner Interconnection Facilities Upgrade(s)	**$15,000**
Non-Shared Network Upgrade(s)	**$ 0**
Total	**$15,000**

Use the following link for Quarterly Updates on upgrades from this report: https://spp.org/spp-documents-filings/?id=18641

A draft Generator Interconnection Agreement will be provided to the Interconnection Customer consistent with the results of this IFS report. The Transmission Owner and Interconnection Customer will have 60 days to negotiate the terms of the GIA consistent with the SPP Open Access Transmission Tariff (OATT).

APPENDICES

A: TRANSMISSION OWNER'S INTERCONNECTION FACILITIES STUDY REPORT AND NETWORK UPGRADES REPORT(S)

See next page for the Transmission Owner's Interconnection Facilities Study Report and Network Upgrades Report(s).

FACILITY STUDY

for

Generation Surplus Request 2025-SR6

200MW Battery/Storage Generating Facility
Grady County
Oklahoma

June 06, 2026

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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 Generation Interconnection request GEN-2025-SR6. 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 needing a Business to Business Virtual Private Network (B2BVPN) for each meter that is used to calculate the energy for GEN-2025-SR6(BESS) from the original GEN-2017-150 resource. This is used to double check data sent to OG&E for Auxiliary Load. For B2BVPN to work, the interconnection customer meters must have MV90 capabilities. The total cost for OKGE to perform B2BVPN for the Surplus Generating Facility, at the customer's collector substation, is estimated at **$15,000.**

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Introduction

The Southwest Power Pool has requested a Facility Study for the purpose of interconnecting a Battery/Storage surplus generating facility within the service territory of OG&E Electric Services (OKGE) in Grady County, Oklahoma. The proposed 34.5kV point of metering is at the existing generating facility in Grady County. This substation is owned by Rumble Solar, LLC. The total cost for OKGE to perform B2BVPN for the generating facility, is estimated at **$15,000**.

Interconnection Facilities

The primary objective of this study is to identify attachment facilities. The requirements for interconnection consist of needing a Business to Business Virtual Private Network (B2BVPN) for each meter that is used to calculate the energy for GEN-2025-SR6(BESS). For B2BVPN to work, the interconnection customer meters must have MV90 capabilities.

The total cost for OKGE to perform B2BVPN for the Surplus Generating Facility, at the customer's collector substation, is estimated at **$15,000.**

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 costs of interconnecting the facility to the OKGE transmission system are 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 generator interconnection, no breakers were found to exceed their interrupting capability after the addition of the Customer's 200 MW surplus generation and related facilities. OG&E found no breakers that exceeded their interrupting capabilities on their system. Therefore, there is no short circuit upgrade costs associated with the GEN-2025-SR6 interconnection.

Table 1: Required Interconnection Network Upgrade Facilities

Facility	ESTIMATED COST (2026 DOLLARS)
Lead time	6 months
OKGE – **Interconnection Facilities**- B2BVPN for each meter that is used to calculate the energy for Battery/Storage generation	$15,000
OKGE – **Network Upgrades**	No additional network upgrades
OKGE – Land or ROW	No Additional ROW
Total	**$15,000**

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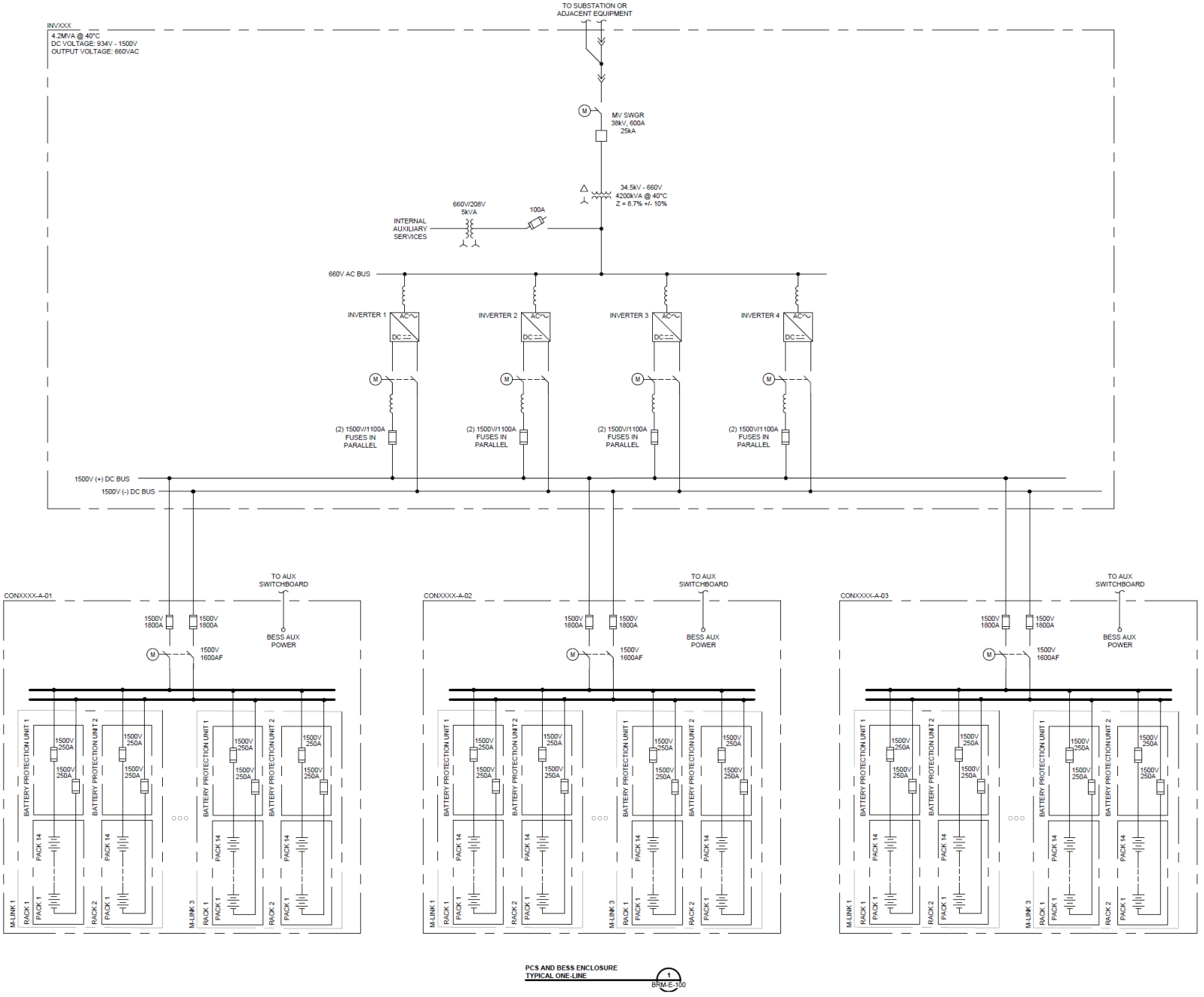
Rumble Solar Surplus



PCS AND BESS ENCLOSURE
TYPICAL ONE-LINE

1
BRM-E-100