



Facility Study
for GEN-2023-132

150 MW Solar Facility
New Interconnection Near Structure 584
On SWPA Line 3007, 161kV, Jonesboro to Independence

March 17, 2025

Summary

At the request of Southwest Power Pool (SPP), Southwestern Power Administration (SWPA) performed the following Facility Study. This Facility Study is regarding SPP GEN-2023-132, Pinnacle, 161kV, 150MW Solar Addition. From SPP’s Generator Interconnection Study Agreement, Appendix 3 submission from Pinnacle Solar LLC, the generation interconnection request consists of a 150MW solar generation facility interconnecting near structure 584 on SWPA line 3007, Jonesboro to Independence.

1. Introduction

The SPP has requested a Facility Study for the purpose of interconnecting a 150MW solar generating facility with a point of interconnection at SWPA’s Line 3007 near structure 584, which is located between SWPA’s Jonesboro Substation and Independence Tap. The interconnection request will require a 161kV, three-terminal ring bus substation and upgrade of SWPA’s Line 3007, Jonesboro-to-Independence, near structure 584 with estimated cost of \$8,600,000 for the facility addition and \$800,000 for the Transmission Owner Interconnection Facilities (TOIF) costs.

2. Existing Interconnection Facilities Review

The existing facility thermal ratings and circuit breaker interrupting capabilities will establish the necessary facility upgrades to accommodate the interconnection request as described in Sections 2.1 and 2.2 below.

2.1. Power Flow Constraints

SWPA’s Line 3007, Jonesboro-Independence has the following seasonal thermal ratings. The transmission line is limited by the transmission line conductor for all seasons.

Season	Summer Normal	Summer Emergency	Spring/Fall Normal	Spring/Fall Emergency	Winter Normal	Winter Emergency
Line Rating (Amps)	851	851	979	979	1163	1163
Line Rating (MVA)	237	237	273	273	324	324

The addition of 150MW generation injection at 9.8 miles west of SWPA’s Jonesboro Substation on SWPA’s Line 3007, Jonesboro-Independence does not appear to cause thermal violation for nearby single, P1, transmission line contingencies.

2.2. Short-Circuit Constraints

The circuit breakers protecting SWPA’s Line 3007 have interrupting capability of 40kA. The highest fault current for the subject line is approximately 27kA. The increase in fault current capability due to the subject interconnection request is expected to be less than 1kA for a 150MW solar generating facility interconnection, therefore no need for upgrade of remote end circuit breakers due to interrupting capability.

3. Required Interconnection Facility Upgrades

In accordance with SWPA’s Minimum Interconnection Requirements, the interconnection request would require at a minimum a 161kV, three-terminal ring bus substation. The circuit breakers will be 40kA interrupting, 2,000 amp continuous rated. Instrument transformers, disconnect switches, bus, and jumpers will be at least 1,200 amp continuous rated.

GEN-2023-132 Pinacle 161kV (Non-Shared NU)	\$8,600,000	48 months
GEN-2017-132 Pinacle 161kV (TOIF)	\$800,000	48 months

Interconnection requests with Southwestern shall be in accordance with SPP’s Tariff Attachment AD, Article I, Section 14, (c) and (d), as shown below. In addition, Southwestern’s deadline of 36 months does not begin with SPP’s approval, but upon the interconnecting party’s signed construction agreement with Southwestern. As stated in Southwestern’s Interconnection Request Procedures, Southwestern’s Interconnection Request Procedures is a two-step process. First, a Facility Study Agreement between the interconnecting party and Southwestern begins the process. Second, a Construction Agreement between the interconnecting party and Southwestern starts the second phase of the project. The anticipated lead time/deadline will be established in the construction agreement and will not start until all construction funds are received by Southwestern.

“(c) Southwestern agrees to coordinate transmission planning and construction activities with SPP, but reserves the right to plan and construct modifications or additions to Southwestern’s transmission facilities without the approval of SPP, and to approve or disapprove the requests by others to plan and construct such modifications or additions.

(d) No interconnections to Southwestern’s transmission facilities shall be made without written contractual agreements between Southwestern and the interconnecting party which satisfy Southwestern’s NEPA requirements and which establish the terms and conditions of the interconnection. Such agreements shall be made pursuant to Southwestern’s then-current Interconnection Request Procedure as posted on Southwestern’s web site.”

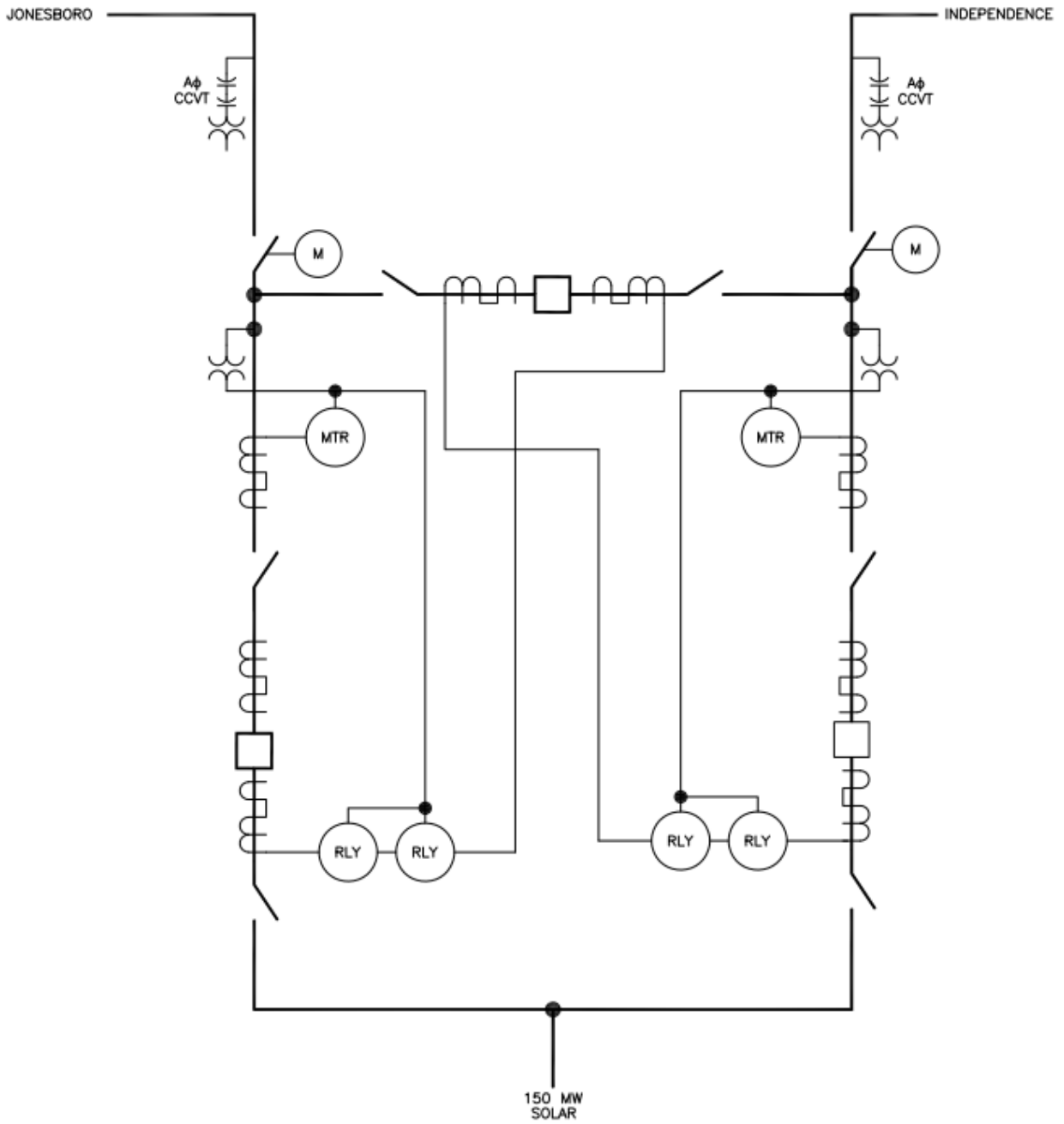


Figure 1 – Three-Position Ring Bus Interconnection
150MW Solar Interconnection at SWPA Line 3007
Near Structure 584