



S&C Connects 10-MW Texas Solar Plant Ahead of Schedule

S&C Featured Solution: Solar Generation Interconnection

Location: Presidio, Texas

Customer Challenge

West Texas offers some of the greatest solar energy potential in the U.S. But it's also a desert that receives less than 10 inches of rain a year. The hostile environment made construction of Chevron Energy Solution's 10-MW Acacia Solar Generation Facility—in a long empty river bed, three miles north of Presidio—extraordinarily challenging. And there was an additional complication . . . Chevron's tight construction schedule. They required collection-point switchgear in 12 weeks, to ensure sufficient time to complete the 34.5-kV/69-kV substation connecting the solar plant to the utility's 69-kV transmission system.

To fulfill this tight schedule, the design-bid-build process needed to be compressed, with long-lead-time equipment ordered early-on, during the engineering phase. The project required a supplier that could not only provide the equipment, but the skills and expertise to deliver the entire interconnection solution.

S&C Solution

Chevron had worked with S&C Electric Company on other projects, and asked S&C to develop a solution that would assure completion of the substation by the specified date.

Continued . . .

“S&C has a proven track record of being a dependable start-to-finish partner for these kinds of renewable projects, and bringing these projects to completion safely, on budget, and on time remains our top priority.”

*—Dan Girard, Director of Renewable Energy and Energy Storage Business Development,
S&C Electric Company*

Aerial view of Acacia Solar Generation Facility.



S&C constructs substation to connect solar plant to 69 kV transmission system.



In response, S&C proposed to furnish the necessary electrical equipment along with the expertise of the company's in-house services group, to deliver the entire project on an engineering, procurement, and construction (EPC) basis. S&C provided a 72.5-kV circuit breaker, current and potential transformers, a grounding transformer, metering, and control enclosure, plus S&C System VI™ Switchgear for 34.5-kV switching, protection and control. Many of the utility's protective relays were housed in the System VI Switchgear to reduce the size and cost of the substation control room.

S&C was also responsible for working with the local telephone company to coordinate installation of a T-1 line to the substation, enabling the plant, the local transmission operator, and the interconnecting utility to remotely monitor and control the solar generation facility.

With S&C's engineering staff centrally located at the company's world headquarters in Chicago, communication with the on-site project and construction managers was simplified. First, grounding and lightning studies were performed by S&C so that the preliminary design could begin. And long-lead-time items were procured while the construction design was being finalized.

Once construction began, S&C's engineers worked hand-in-hand with the project managers to coordinate efforts and overcome site challenges. Among such

challenges were the rock deposits at the site, which caused below-grade work to take twice as long as expected. Project managers and subcontractors met daily to discuss ways to get the project back on track. The team was able to make up for the lost time during steel and equipment erection as well as during cable pulls and terminations by working weekends and extended hours.

The desert environment made adherence to S&C's site Safety Plan a primary focus for the project. S&C scheduled daily Job Hazard Analysis meetings, along with equipment inspections, to ensure that crews knew what each individual in the substation would be doing, and the hazards associated with each task. Every individual who entered the site was held to the same stringent safety standard and was required to complete an on-site safety briefing.

Valued Outcome

Through S&C's careful planning and execution, construction was completed and the substation energized over three weeks ahead of schedule. And with S&C's commitment to safety, there were zero recordable incidents and days lost.

The Acacia Solar Generation Facility is now producing 10 MW of clean energy . . . enough to power 950 homes. The customer was delighted with S&C's performance on this project.

