



"[They] handled all of the intricacies of our project, complied with the manufacturer's exact specifications, and completed all documentation, with the knowledge and capability of a true professional."

**-Brian B., Vice President
Robert A. Bothman**

Fort Hunter Liggett Army Base

Guaranteed Power Delivery

Business Needs

The Fort Hunter Liggett (FHL) Solar Micro Grid project was motivated by a federal mandate to Army base facilities nationwide to be responsible for as much of their own energy generation as possible and to make extensive use of renewable energy resources. The RFP for this project was let in 2010, and the key criterion in evaluating potential respondents was technical competence. McCalmont Engineering put together the technical response to the RFP and the project team.

As a key member of the design-build team, McCalmont Engineering's drawings were the main portion of the design submittal to the U.S. Army Corps of Engineers. McCalmont Engineering served as the Engineer of Record and primary design subcontractor, and we also had responsibility for approximately half the procurement for the project (modules, inverters, and rack mounting system). Our designers and engineers coordinated the preliminary physical layout drawings for the positioning and elevation of the solar array and other equipment. The McCalmont Engineering team also developed the DC & AC electrical single-line diagram (SLD), wire calculations, and conduit schedule and routing.

Solution

The FHL project was for design and construction of unusually large canopy structures that could accommodate parking of large Army trucks and supply vehicles beneath them. Each canopy structure is approximately 18 ft. tall by 44 ft. wide and 1175 ft. long. Because of the substantial height of the canopies to allow truck parking beneath them, we developed a double-post design with approx. 9 ft. cantilevers on either side. This design gives great stability for the height while also allowing an adequate turning radius for the large trucks that turn into parking spaces beneath the canopies. There were previous ground contamination issues at the site, so we developed a foundation design that limited penetration depth and disturbance to the under-surface soil.

Due to the electrical utility provider's solar interconnection restrictions, no more than 1 MW of the solar-generated power could enter the utility grid at any time. To alleviate this unwanted stress on the grid, McCalmont Engineering designed, engineered, and implemented a Supervisory Control and Data Acquisition (SCADA) system to curtail power from entering the utility grid whenever the Base's net electricity usage fell below this 1 MW cap.

Project Specifications

Location:	Jolon, CA
Size:	2 MW
Scope:	Full engineering & design
Project Timeline:	March 2011-Aug. 2013
Type:	Solar Carports
Primes:	Phase 1: Robert A. Bothman Phase 2: Koontz Electric Co.
Contract Amount:	\$8,500,000



Benefits

The project was delivered on time and within the original project budget, and both the Army Corps. of Engineers and the FHL Base have been delighted with McCalmont's performance throughout the project. Our extensive prior construction experience was helpful in producing a design that could be efficiently built at lowest cost. Our expertise at coordinating and managing difficult projects enabled us to follow the detailed and complex processes of the federal procurement regulations known as the Federal Acquisition Regulation (FAR). In short, McCalmont Engineering's design, construction, and project management experience sets us apart, and this project is one example of this and our success in delivering great satisfaction to our customers.

Project Reference

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