POWER PROJECT IN 60 SECONDS: POMONA ENERGY STORAGE

PROJECT

Battery energy storage system design

SCHEDULE

Start: September 2016
Completion: December 2016

CLIENT

AltaGas

POWER'S ROLE

- Detailed electrical design for interconnection of the battery systems to the transmission grid
- Architectural, structural and mechanical design for the new battery enclosure and electrical components
- Fire protection system design
- Support for battery system installation, testing and commissioning

IN LAYMAN'S TERMS

After the shutdown of a leaking natural gas storage facility outside of Los Angeles, fuel supplies to area power plants became constricted. The California Public Utilities Commission, fearing power blackouts, expedited deployment of energy storage systems. Battery energy storage system (BESS) facilities can reduce the need to fire up natural gas generators at peak times while mitigatingfluctuations from renewable energy sources such as wind and solar.

Southern California Edison (SCE) selected AltaGas to build, own and operate a 20 MW battery storage project with a discharge capacity of 80 MWh at AltaGas's Pomona natural gas-fired peaking power plant in the east Los Angeles Basin, which has existing links to the grid. SCE will purchase energy from the project under a 10-year power purchase agreement. This agreement allows SCE to integrate more renewable energy into its system and help its customers avoid costly outages.

AltaGas, in turn, selected POWER to provide detailed design. POWER brought to the project its considerable experience with energy storage systems, as well as extensive expertise with renewable energy sources such as wind, solar, geothermal and biomass.

PHOTO: JAKE RYAN

WHAT IS ENERGY STORAGE?

Simply put, energy storage is the capture of energy produced at one time for use at a later time. Within an electrical power grid, energy storage is a collection of methods used to store energy on a large scale. Renewable energy resources, like wind and solar, are intermittent and do not necessarily produce energy at the rate it is consumed. When production exceeds consumption, energy from these sources can be stored in a couple of different ways. One such way is a battery energy storage system. When production falls below consumption, energy is then taken out of storage and returned to the grid.

12,240 batteries.
The 20 MW battery storage project contains more than 12,200 batteries housed within a 10,800 square foot building, one of the largest battery storage facilities in North America.

PROJECT SPECIFICS

- One of the largest battery storage facilities in North America
- 10,800 square foot facility includes 12,240 batteries, 10 Parker inverters and 1,020 battery racks
- Lithium-ion batteries, software control platform and power conversion technology provided by Greensmith Energy Management Systems
- New battery enclosure located within an existing warehouse
- Battery enclosure divided into four independent fire-rated battery rooms with new HVAC ductwork, electrical interconnection services and fire protection systems
- New air-cooled condensing HVAC units provided for battery cooling
- FM200 fire protection system, compliant with NFPA 2001 and connected to a remote monitoring station
- Interconnection to existing 13.8 kV switchgear

ACCOMPLISHMENTS

FINISHING ON TIME. Helping AltaGas meet the energization date required by the PPA was our number one priority. POWER-Boise Generation Project Manager Steve Harris says that while deploying new technology in the power industry can take years, POWER was able to help AltaGas bring this project online in less than four months—the fastest deployment of an 80 MWh storage facility to date. Completing the project on time was a job well done. Setting an industry record was icing on the cake.

BUILDING SOMETHING BIG. At the time it was built, the Pomona Energy Storage Facility was the largest battery storage project in North America. It did not retain that title for long and continued growth in renewables along with improvements in technology will result in larger, more efficient battery storage facilities. The experience gained by working on the Pomona Energy Storage Facility will help us take advantage of future opportunities.

WORKING AS A TEAM. This was a cross-divisional, multi-office effort. The team from two different divisions and four different offices worked together to complete tasks efficiently and effectively—no small feat on a project with this kind of accelerated schedule. In the end, the project was delivered on time and on budget, meeting AltaGas' high standards and showcasing the experience and dedication of the team members involved.

PROJECT TEAM

PM/PE	Steve Harris (Generation – Boise)
Architectural	Steve Deal, Steve Scott and Scott Corkery (Facilities – Hailey)
Structural	Marty Ballod (Generation–Mt. Laurel)
Electrical	Jason Rippee (Generation – Hailey)
HVAC	Kelly Woods (Facilities – Boise)
Fire Protection	Ray Podesfinski (Generation – Oradell)

POWER ENGINEERS