

CASE STUDY / **LOS ESTEROS CRITICAL ENERGY FACILITY**

POWER PLANT UPGRADES IMPROVE EFFICIENCIES AND PERFORMANCE

After 10 years of operating, the Los Esteros Energy Facility in San Jose, California, needed an upgrade. To convert from a single-cycle facility into a combined-cycle facility, help was needed installing the new steam turbine, gas compressor and piping.



FABRICATION METHOD SAVES PROJECT TIME

To quickly build and replace piping for the project, AZCO created a temporary fabrication shop on-site.

CHALLENGE

The Los Esteros Critical Energy Facility, in San Jose, California, began operations in 2003 with four turbines and a 188-megawatt capacity. Over time, the power plant required upgrades to increase capacity and improve environmental efficiencies, and needed help converting from a simple-cycle into a combined-cycle facility.

SOLUTION

A decade later, our team performed a new erection of the steam turbine and the balance of the plant piping and equipment for the power plant.

The project included the installation of a 125-megawatt Mitsubishi steam turbine and generator, along with associated piping and equipment. The piping scope for the turbine consisted of 400 feet of carbon and stainless lube oil and hydraulic oil piping. In addition, we addressed the fuel gas compressor and related piping.

For the balance of the plant, fabrication and installation was completed including 5,200 feet of critical pipe, 25,000 feet of noncritical small bore pipe, 15,000 feet of noncritical large bore pipe and equipment erection. The critical piping system is made up of high-pressure steam, cold reheat steam and hot reheat steam. The noncritical systems included boiler blowdown, boiler feedwater, aux cooling water, fuel gas and circulating

cooling water. In addition to balance of plant piping and equipment, AZCO installed a 70,000-pound compressor.

Furthermore, a fabrication shop was built on-site to more efficiently rebuild and replace pipe for the project, saving costs and time.

RESULTS

As a result of the upgrades to the facility, the capacity increased from 188 megawatts to 309 megawatts, and the efficiency and environmental performance of the power plant improved significantly.

Now, the combined-cycle facility is one of the cleanest of its kind in California, using natural gas as fuel and recycled water for cooling.

ABOUT AZCO



A BURNS & MCDONNELL COMPANY

AZCO is a 100% employee-owned heavy industrial construction and fabrication

solutions provider that builds the critical infrastructure needed to keep communities and industries thriving. Part of the Burns & McDonnell family of companies, we work with more than 750 union craft personnel across the country using an integrated approach to deliver more advanced controls and predictable outcomes. Learn how we are designed to build at azco-inc.com.

PROJECT STATS

CLIENT

LG Constructors —
CH2M Hill

LOCATION

San Jose, California

COMPLETION DATE

2013

309

MEGAWATT FACILITY

125

MEGAWATT STEAM TURBINE
AND GENERATOR

45K+

FEET OF PIPE FABRICATED
AND INSTALLED