



COMBINED HEAT AND POWER HOSPITAL VETERANS ADMINISTRATION HOSPITAL

DEVELOPER/OWNER

Sempra Energy

LOCATION

La Jolla, California, USA

PRODUCT

Mercury™ 50 Recuperated Gas Turbine

CUSTOMER VALUE

Efficient and Stable Power

Under the United States Federal Energy Managers Program, the Veterans Administration (VA) Medical Center entered into an energy savings performance contract with Sempra Energy Services. The project required replacing two existing 1.2 MWe Solar® gas turbines that were installed in 1987. By replacing the existing turbines with a low emissions Mercury 50 gas turbine which utilizes an ultra-lean premix combustor design and produces less than 5 ppmv NO_x, the hospital is able to generate US\$4.2 million in emissions offset credits. The Mercury 50 will handle nearly all of the medical center's power needs, giving the hospital more secure onsite generation in the event of a utility failure.

Solar® Turbines

A Caterpillar Company

Combined Heat and Power - Hospital



PLANT DATA

Cogeneration System Upgrade and Replacement

Heat Recovery Steam Generator

Mercury 50 (4.6 MWe) Gas Turbine Generator Set

500 Ton Double Effect Absorption Chiller

Cooling Tower

Infrastructure and HVAC Improvements

Steam: 13,000 Pounds per Hour

Fuel: Natural Gas

OUR PRODUCTS AND SERVICES

Gas Turbine Package and Auxiliary Equipment

Controls

Start Up and Commissioning

Field Training

Extended Service Agreement

US\$1.7 MILLION IN ENERGY COST SAVINGS

REDUCED EMISSIONS

SECURE ONSITE POWER

EMISSIONS OFFSET CREDIT GENERATION

The project required replacing two Saturn® 1.2 MWe turbine generators without emissions control capability with one 4.6 MWe Mercury 50 recuperated gas turbine generator set. The Mercury 50 was an ideal fit for the hospital due to its recuperated exhaust heat design. The recuperator recovers exhaust heat by transferring it to the combustion air downstream of the compressor. The result is a significant electrical efficiency improvement. Over the lifespan of the Mercury 50, its lower emissions will save an estimated 40 tons of pollution annually. The combined heat and power system will provide 13,000 pounds per hour of 150 psig saturated steam used for heating, autoclaves and absorption cooling for the campus. In 2010, the plant became the first VA facility in California to receive an Energy Star Award from the United States Department of Energy. This award is given to organizations that have made outstanding contributions to protect the environment through energy efficiency.

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