



5 MWe COMBINED HEAT AND POWER PLANT Veterans Administration Hospital

DEVELOPER/OWNER

Sempra Energy

LOCATION

La Jolla, California, U.S.A.

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 generators with the low emissions *Mercury*[™] 50, which utilizes an ultra-lean premix combustor design and produces less than 5 ppmv NO_x, the hospital was able to generate \$4.2 million dollars in emissions offset credits. The *Mercury* 50 gasturbine 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

5 MWe GAS TURBINE COMBINED HEAT AND POWER PLANT



PLANT DATA

Cogeneration System Upgrade and Replacement

Heat Recovery Steam Generator

Mercury 50 Gas Turbine Generator Set (4.6 MWe)

500-Ton Double Effect Absorbtion Chiller

Cooling Tower

Infrastructure and HVAC Improvements

Steam: 13,000 pounds per hour

Fuel: Natural Gas



OUR PRODUCTS & SERVICES

Gas Turbine Package and Auxiliary Equipment

Controls

Start Up and Commissioning

Field Training

Extended Service Agreement

SAVES \$1.7 MILLION DOLLARS IN ENERGY COSTS

REDUCES EMISSIONS

PROVIDES SECURE ONSITE POWER

GENERATES EMISSIONS OFFSET CREDITS

The project required replacing two *Saturn*[®] 1.2 MWe turbine generators without emission control capability with Solar's 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 of 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.

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