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 NOx, the hospital was able to generate $4.2 million dollars in emissions offset credits. The *Mercury* 50 gas turbine 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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