



SOUTHEAST
CHP
APPLICATION
CENTER

CLEAN HEAT & POWER

FORT BRAGG

5 MW COMBUSTION TURBINE

CHP FACTS

Location:

Fort Bragg, NC

Generation Equipment:

- 5 MW Combustion Turbine
- Heat Recovery Steam Generator
- 1,000 ton Absorption Chiller

Output:

5 MW

Fuel:

Natural Gas



PROJECT OVERVIEW

The CHP system installed at the Fort Bragg's 82nd Central Heating Plant represents a joint venture between the U.S. Army, the Department of Energy's Oak Ridge National Lab and Honeywell Labs. The plant integrates power generation and thermally activated cooling technologies for a 5 MW integrated energy system. Thermal energy is also available for the production of steam. The plant serves a large number of barracks and other buildings on base providing steam for heat and domestic hot water, as well as chilled water for air conditioning. Through Oak Ridge National Lab, the Honeywell Energy Services Team is collaborating with DOE's Federal Energy Management Program (FEMP) to allow the 82nd Central Plant to serve as a showcase CHP site.

PROJECT GOALS

- Integrate power generation with thermally activated cooling
- Develop supervisory control system with on-line optimization
- Install and monitor the performance



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UNITED STATES

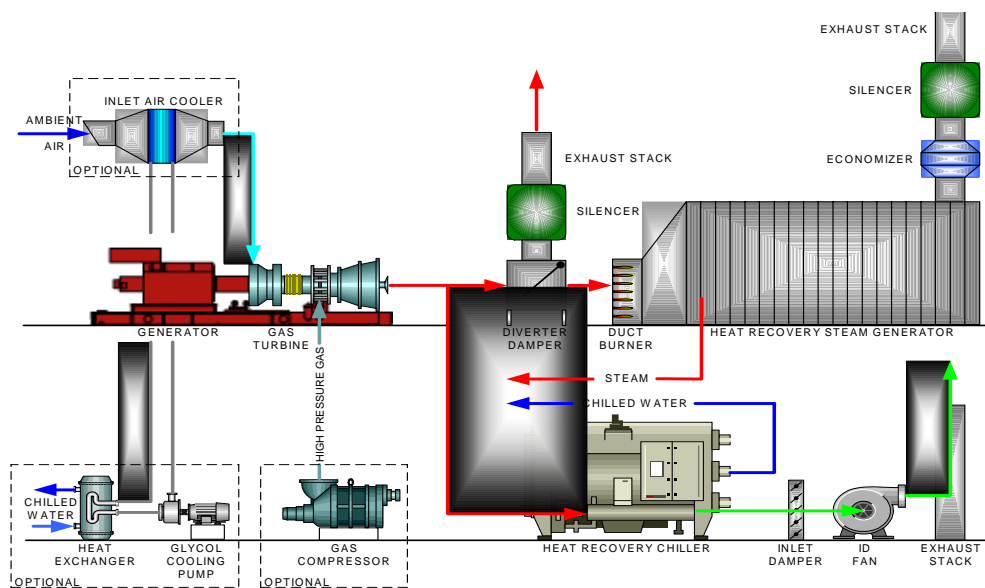
DOE

CHP OPERATION

The gas turbine is the Solar Taurus 60, which burns natural gas and is rated to produce 5 MW of power with an exhaust flow rate of about 170,000 lb/hr. This turbine is also capable of burning fuel oil. In general, the system relies on natural gas as its primary fuel source.

The exhaust-fired chiller is made by Broad and is rated at 1000 refrigeration tons of cooling at 69,235 lb/h of exhaust. The design data specifies 54°F / 44°F inlet/outlet temperatures for its chilled water loop and 85°F / 95.2°F for its cooling water loop.

The HRSG system (including a Coen duct burner) is provided by Rentech Boiler Systems, Inc. and is rated to produce 27,800 lb/h of saturated steam at 125 psig from 170,089 lb/h of exhaust when unfired. The duct burner is designed to burn natural gas only.



CHP EQUIPMENT

- Solar Turbines Taurus 60 gas turbine, rated at 5 MW
- Broad Air Conditioning 1000-ton heat recovery absorption chiller
- Coen natural gas-fired duct burner, capable of 55.2 MMBTU/hr
- Rentech Type "O" Heat Recovery Steam Generator, rated at 27,800 lb/hr of 125-psig steam unfired; or 81,200 lb/hr when fired with duct burner