

Industrial Gas Turbines Increase Energy Security

An advanced integrated energy system (IES) installed at Ft. Bragg, North Carolina, now provides key facilities on the base with cooling, heating, and power. ORNL's Distributed Energy Program formed a public-private partnership with Honeywell, the Federal Energy Management Program (FEMP), and Ft. Bragg's Public Works Business Center (PWBC) to develop, install, and test the IES.

Honeywell

ICT
I.C. Thompson

Broad USA

CHelsea GROUP LIMITED



Ft. Bragg CHP plant integrates a Solar gas turbine with a Broad USA absorption chiller and a heat recovery steam generator to generate cooling and heating with no additional fuel.

The System Features the Latest Improvements in IES Technology

- The turbine can be fired with natural gas or fuel oil.
- Turbine exhaust is a heat source for either an absorption chiller or a steam generator.
- System controls optimize operation under varying conditions.
- The design can be adapted for other applications.

Optimization using the Supervisory System informs the operator of the lowest hourly cost and equipment configuration.



Benefits

- Improved security during power outages
- Integrated components: 5-MW turbine exhaust powers the absorption chiller and the heat-recovery steam generator.
- Computerized optimization system responds to real-time electricity prices and weather data.
- Annual energy savings estimated at \$1,800,000

Ft. Bragg 82nd Central Heating Plant



- Largest central plant on the base, serves barracks and other buildings
- On-site power generation and energy recovery replace poorly performing steam boilers.
- Showcases CHP project for Federal Energy Management Program

Dedication scheduled at Ft. Bragg, June 10, 2005, celebrating the IES installation



U.S. Department of Energy

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Office of Distributed Energy

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