



Broad Exhaust Fired Absorption Chiller 2,500 RT



5 MW Solar Turbine Combustion Turbine

# Burns & McDonnell CHP System Team

## Benefits of Packaged CHP Systems

### Capital Cost Reduction

Packaged systems can cut CHP system capital costs by 15% to 30%.

### Shorter & Less Expensive Installation

IES can reduce CHP system installation time by as much as two-thirds, and provide corresponding installation cost savings.

### Replicability

System designs are suitable for multiple applications in facilities around the country.

### Optimize Facility Energy Use

Packaged systems allow facility operators to manage power generation, cooling and heating to optimize energy use as well as reduce electricity use during peak periods.

### Simplified Systems

The use of exhaust-fired absorption chillers eliminates the need for steam/hot water generation equipment.

### Modularity

This system can be built up in modular increments matched to your facility needs, and can be easily expanded as the need arises.

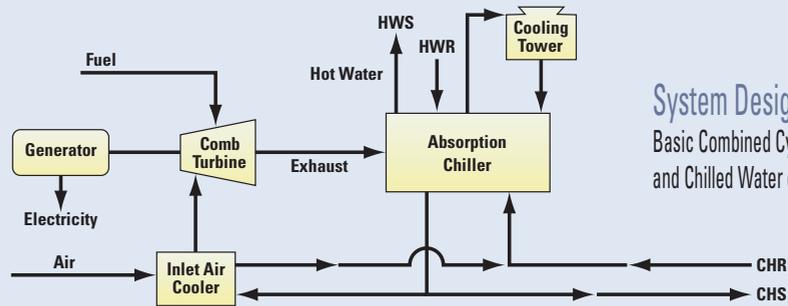
### Program Contact:

Jan Berry  
Oak Ridge National Laboratory  
(865) 241-1939 • berryjb@ornl.gov

<http://www.eere.energy.gov/de/>

## Project Overview

Burns & McDonnell teamed with Broad USA, Solar Turbines, and Austin Energy to develop a modular system that integrates a 5 MW combustion turbine generator with an advanced waste heat-fired 2,500-ton absorption chiller. The system will provide electricity to a microgrid and chilled water to a high-tech industrial park. In addition to improved reliability through on-site generation and producing 2,500 tons of free cooling, the system will displace 2,500 tons of electrical centrifugal chilled water during peak periods.



System Design Concept  
Basic Combined Cycle, Electricity  
and Chilled Water or Hot Water



## Objectives

- Energy uses for prototype Integrated Energy System (IES):
  - Electricity to local area and electric grid
  - Chilled water for air conditioning and inlet air cooling for gas turbine
  - Space heating for IES plant
- Cost savings through efficiency: 70%-80%
- Integrated control system that will allow ease of operations and remote monitoring
- Modular design will be adaptable to meet various capacity requirements, space limitations, and grid interconnection
- Improve reliability with proven on-site generation technologies that isolate facilities from grid power quality problems and outages

### Project Contacts:

Rod Schwass  
Program Manager, Burns & McDonnell Engineering  
(816) 822-4213 • [rschwass@burnsmcd.com](mailto:rschwass@burnsmcd.com)

Ed Mardiat  
Director of CHP Development, Burns & McDonnell  
(816) 822-3344 • [emardiat@burnsmcd.com](mailto:emardiat@burnsmcd.com)

