

## DELL CHILDREN'S MEDICAL CENTER Commercial Cooling with Energy Storage

Austin, TX



### PROJECT OVERVIEW

Dell Children's Medical Center of Central Texas opened its doors in January 2007 with a state-of-the-art Cooling, Heating, Power (CHP) system. Dell Children's Medical Center is served by an on-site 4.3 MW combustion turbine generator, which will recycle waste heat to produce 22,000 lbs/hr of steam for hospital process loads and 900 tons of chilled water from a steam absorption chiller. The plant also includes a 1,500 ton packaged electrical centrifugal chiller plant, a 20,000 lb/hour packaged boiler, and a 1,500 kW diesel emergency engine generator.

The hybrid energy plant is owned and operated by Austin Energy, the local municipal energy utility, and Burns & McDonnell was the EPC partner. The combined utility system is producing grid independent power with two (2) grid feeds from two (2) separate substations as backup to the on-site combustion turbine generator. In the event of a grid outage, the hybrid energy plant will continue to operate and provide 100% of the hospital's power and thermal energy needs.

The project has an aggressive goal of becoming Platinum LEED™ Certified - the first healthcare facility in the world to achieve this prestigious certification. The Leadership in Energy and Environmental Design (LEED™) Certification is based upon five well-founded scientific standards emphasizing state-of-the-art strategies for sustainable site development including energy efficiency, water savings, materials selection, waste management and indoor environmental quality.

### PROJECT CHALLENGE

To win projects in a highly competitive central utility plant market, such as the Dell Children's Medical Center, engineering firms are forced to assume greater project risk in managing total project cost, schedule, and operating performance. In order to manage their risk, Burns & McDonnell chose to promote innovation by utilizing a TAS' Packaged Central Plant.

## DELL CHILDREN'S MEDICAL CENTER Commercial Cooling with Energy Storage

Austin, TX

### THE SOLUTION

Critical care facilities like the fully digital Dell Children's hospital need more reliability and redundancy. This hybrid energy system provides that as well as extraordinarily low emissions. By allowing Austin Energy to build an on site power plant, the hospital in turn saves when it purchases its power from Austin Energy at tariff rates and also render the hospital grid independant.

Burns & McDonnell was contractually obligated to deliver the project on time within a proposed lump sum price. To win a highly competitive, unprecedented project like this, they decided to promote packaged components. This allowed them to manage their deadlines, risk and total project cost. TAS supplied most of the packaged components and is known for producing highly efficient modular packaged central plant systems within its ISO 9001 certified manufacturing facility.

TAS supplied the following pre-engineered plant modules:

- 1,500 ton packaged central chiller plant, including two (2) cell cooling tower system.
- 2500 ton packaged central chiller plant, including two (2) cell cooling tower system.
- Two (2) stage, 930 ton absorption chiller, two (2) cell cooling tower system.
- Chilled water distribution pump package
- Motor control room.

### RESULTS

- ▶ The Dell Children's hospital was able to save \$6.8M on capital costs of the energy plant.
- ▶ The hospital has an off-the-grid redundant, reliable, low-cost power supply.
- ▶ Austin Energy is able to sell the excess power to other nearby users and with the help of Burns & McDonnell, was able to share in the Department of Energy \$3,000,000 grant under the "cost share funding integrated energy system solicitation program."



### ABOUT TAS ENERGY

TAS Energy provides clean and highly efficient solutions through the design and manufacturing of modular energy conversion and cooling systems for the power generation industry; district, commercial and industrial process cooling; data center/mission critical; and the renewable energy sectors.