OptimumEnergy®

CUSTOMER CLIP

UNIVERSITY OF TEXAS AT AUSTIN

"OptimumHVAC is exceeding expectations and the operators love it. This is the first optimization system I have bought that actually works." **Kevin Kuretich, P.E., Associate Director of Plant Operations, University of Texas at Austin**

Efficient District Cooling

As one of the largest public universities in the U.S., the University of Texas at Austin's 350-acre main campus supports 21,000 faculty and staff, 17 colleges and schools, and more than 50,000 students. A reliable, safe district cooling system is an imperative for the University, which requires cooling 24/7, 365 days a year. But with energy prices tripling in less than 10 years, the University has found it challenging to meet the campus' growing cooling needs using less power.

The District Cooling system consists of four central chilling stations that serve 200 campus buildings. Today the system's 46,000 tons of capacity is provided by 11 electric centrifugal chillers ranging in size from 3,000 to 5,000 tons. Annual chilled water production is more than 145 million ton-hours, and each year the system consumes approximately 109 million kWh (about one-third of the campus' central power plant output), for an annual average wire-to-water efficiency of 0.75 kW/ton. Peak load is 35,000 tons and growing.

Phase 1 Savings: Chilling Station 6

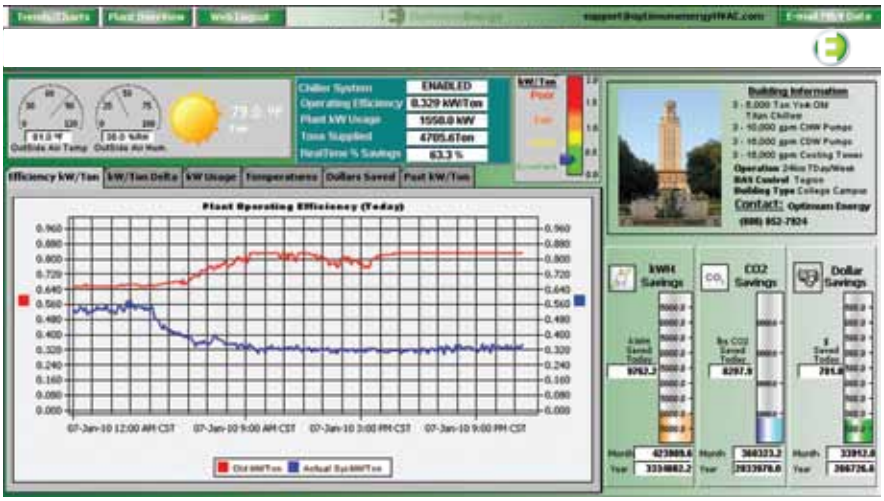
The University's District Cooling optimization project started with Chilling Station 6, a new all-variable speed system that replaced the University's oldest plant, Chilling Station 2. The purpose of the new chilling station was to increase cooling capacity to keep up with campus growth and provide the lowest lifecycle cost for the University. To meet these requirements, Chilling Station 6 was designed with:

- 15,000 tons of cooling capacity
- A primary-only all variable speed system
- Three 5,000 ton variable speed electric York chillers with 39 degrees F chilled water design
- Three variable speed condenser water pumps (15,000 GPM, 110 ft hd and 500 hp)
- Three variable speed chilled water pumps (10,000 GPM, 250 ft hd and 800 hp)
- Three variable speed cooling tower cells (15,000 GPM each, 250 hp fans, 85-95 degrees F and 78 degrees F wet bulb design)
- PLC control system
- OptimumHVAC™ solution, including OptimumLOOP™ software and OptimumMVM™ services

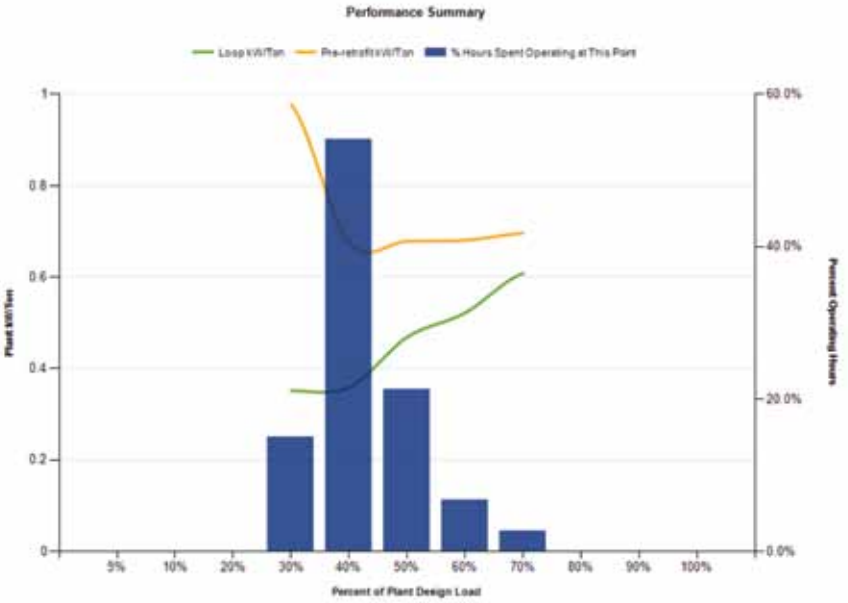
THE STATS

First year performance of Chilling Station 6 with OptimumHVAC:

- Reduced energy consumption by 6,000,000 kWh
- Lowered operating expenses by $500,000
- Produced 87,000,000 ton-hours per year
- Achieved an annual performance range of 0.33 to 0.78 kW/ton
- Realized a simple payback for OptimumHVAC in 12 months



OptimumMVM shows real-time plant operating efficiency, daily and monthly dollars saved, and CO_2 reduction levels. It is accessible to University technical staff and Optimum Energy engineers.



This chart summarizes the performance of Chilling Station 6 over a seven-day period in January 2010. For about 70% of total run hours, the plant was running between 30% to 40% of design load performance ranging from 0.32 to 0.35 kW/ton.

Using OptimumHVAC, the annual performance range for Chilling Station 6 is 0.33 to 0.78 kW/ton, compared to the design performance range of 0.57 to 0.79 kW/ton, saving the University approximately $500,000 per year.

Phasing in Additional Savings: Chilling Stations 3 and 5

As a result of efficiency improvements in Chilling Station 6, the University is phasing in implementation of OptimumHVAC in Chilling Stations 3 and 5. Once all the phases are complete, coordination of Chilling Stations 3, 5 and 6 will be fully automated, ensuring hydraulically stable operation and maximizing efficiency of the entire District Cooling system. As each phase is completed, energy efficiency of the entire district cooling plant will improve. For example, Phase II is expected to reduce energy by more than 3 million kWh per year in addition to energy reductions already realized in Chilling Station 6.

Phases II & III: Implementation of OptimumHVAC to coordinate all chilled water pumps in Stations 3, 5 and 6, including coordination of a new thermal energy storage tank.

Phases IV & V: Full implementation of OptimumHVAC in Stations 3, 5 and 6, resulting in automatic coordination of all chilled water pumps, condenser water pumps and cooling tower fans, as well as the thermal energy storage tank.

ABOUT OE

Simply put, Optimum Energy is the energy optimization expert. We use integrated software and cloud computing to optimize HVAC systems to deliver sustained energy reductions. Organizations like Mineta San Jose International Airport, the University of Texas at Austin and a variety of Fortune 100 corporations rely on the Optimum Energy OptimumHVAC solution for the continuous commissioning that maintains energy optimization year after year. Contact your local OE sales representative for more information about HVAC system optimization from Optimum Energy.

OptimumEnergy®

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