The Carmalita Chiller Plant provides central cooling to three schools in Punta Gorda, plus multiple maintenance and operations facilities of the Charlotte County Public Schools

CASE STUDY

K-12 Education

Facility at a glance

Name
Carmalita District Chiller Plant

Location
Punta Gorda, FL USA

Facility size
450,000 ft² expansion to 950,000 ft² facility

Issue
Central energy plant cools three schools as well as multiple school district maintenance and operations facilities

Solution
Daikin Pathfinder® air cooled chiller used in conjunction with an ice storage system

Charlotte County Schools Reduce Energy Costs and Earn Utility Incentive with Daikin Chiller and Ice Storage System

Issues

With 23 schools and more than 18,000 students in those schools, the Charlotte County (Florida) Public School District is always looking for ways to maximize the investment in its students. As part of that goal, an analysis of various methods of energy conservation and operating expense reduction were investigated, according to Rick Sechrist, the energy manager and educator of the district's Maintenance & Operations Department.

Solution

That analysis and discussions with Florida Power and Light, the local electrical utility, identified significant energy savings if the district could avoid running their chillers during peak demand times. Further analysis showed the largest savings could be achieved with an air cooled chiller used as a "swing" chiller to shave demand by creating ice at night.

A 265-ton Daikin Pathfinder air cooled chiller, premium efficiency model, was chosen for the ice making duty based on its industry leading efficiency, quiet operation and proven reliability in other installations in the state of Florida. The ice storage system was designed and provided by FAFCO.

Outcome

The ice storage system and chiller installed at the Carmalita chiller plant produced a shift of an estimated 614.3 tons of cooling electrical demand on the worst (hottest, most humid) day of the year. That demand shift earned an incentive from Florida Power and Light of more than $294,000.

Energy Savings Summary

Annual electric energy peak demand shift: **614.3 tons after the air cooled chiller/ice storage system installation for the central plant**

Projected incentive from utility for reducing peak load electrical demand: **$294,864**

The 265-ton Daikin Pathfinder air cooled chiller with premium efficiency is used as a "swing' chiller to shave demand by creating ice at night in conjunction with a FAFCO ice storage system.

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