VA Gulf Coast Veterans Health Care System automates chilled water operations with Siemens Demand Flow™

Biloxi, Mississippi – The Veterans Affairs Gulf Coast Veterans Health Care System (VA HCS) opened in 1932 to improve the health of the men and women who have served nation and has served more than 50,000 veterans from its Biloxi, Mississippi facility. The VA HCS also supports readjustment counseling centers and VA National Cemeteries along the Gulf Coast.

Because of its aging facilities and infrastructure, the VA HCS set goals to automate its operations within its central chilled water plants, and modernize the buildings to improve environmental conditions and energy efficiency. They engaged Siemens Industry, Inc., to automate and simplify the chilled water system operations for two VA HCS buildings in the Gulf Coast area.

Client Objectives

VA HCS established the following objectives for the project:

- Automate chilled water operations
- Modernize buildings
- Upgrade DDC controls
- Reduce energy consumption
  - At near peak load, three HCS chillers ran continuously in order to provide sufficient chilled water throughout the facility

Siemens Solutions

To achieve these objectives, Siemens implemented the Demand Flow™ chiller plant optimization control strategies to complement the new APOGEE® building automation system.

Demand Flow is Siemens patent-pending, proven technology that optimizes central chilled water systems to reduce the total plant energy consumption by 20-50%. Demand Flow offers a holistic approach for optimizing an entire chilled water system, including potential air-side savings. This optimization increases the deliverable tonnage of the chilled water plant and simplifies plant operations and controls, without sacrificing occupant comfort in favor of energy savings. Demand Flow uses specialized algorithms to optimize all components of the chilled water system.

For VA HCS, Demand Flow was implemented as part of a larger Performance Contract by Siemens, which included:

- Replacement of existing end-of-life chillers
- Upgraded pumping and pneumatic equipment

All of these improvements had to be completed in this critical health-care environment that operates 24 hours a day, seven days per week. It was critical to the hospital operations staff that the facilities would not lose chilled water or experience downtime as a result of the improvements.

Client Results

Siemens fully automated the chilled water system for the VA HCS without loss of chilled water to the buildings and without disturbing hospital operations. The Siemens Demand Flow chiller plant optimization solution reduced the total chilled water system energy consumption by approximately 35%. VA HCS can meet its demand for chilled water with just two of its chillers, as opposed to three. Total chilled water system efficiency (chillers, pumps, and cooling towers) improved from 1.217 kw/ton to 0.707 kw/ton, based on a yearly average.

Energy savings resulting from Demand Flow are in excess of $135,000 annually for the VA Gulf Coast Health Care System. Because of the results Siemens Demand Flow has delivered for the VA HCS, Demand Flow has been specified for a new VA hospital chilled water plant, which began construction in 2010.

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