



Presence Saint Joseph Medical Center

Retro-Commissioning

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Facility

1.2 million-square-foot medical center with 480 licensed beds in Joliet, IL

Construction Cost

\$32,000

Project

The facility was retro-commissioned as part of the ComEd Smart Ideas Incentive Program. Savings resulting from implemented retro-commissioning measures exceeded \$330,000 a year (more than 2 million kWh in electricity and nearly 450,000 therms of natural gas).

PROJECT OVERVIEW

- Four steam boilers totaling 2,050 boiler horsepower provide primary heating. Steam is used for the kitchen, sterilizers, and almost all air-handling unit heating coils. Hot water is used for some AHU heating coils, terminal unit reheat coils, baseboard hot water heat, radiant heating panels, and fan coil units.
- The chilled water system is variable-secondary with a constant-primary served by four water-cooled, electric centrifugal chillers and two air-cooled chillers. The total cooling capacity is 4,100 tons. Cooling is provided year-round.
- PSJMC's ventilation system has about 35 AHUs, ranging from 1960s vintage to recently installed units. The mix includes constant volume and variable volume units, 100% outside air and recirculating units, and pneumatically controlled and digitally controlled units.
- G/BA presented eight retro-commissioning measures (RCMs) to the hospital. The two measures chosen for priority implementation focused on improving efficiency of 13 AHUs. Other RCMs may be implemented later.
- Most of the energy savings resulted from reduction of simultaneous heating and cooling that was occurring in four large AHUs, due to premature failure of steam control valves. Replacing electro-hydraulic steam valve actuators and insulating control valves solved the problem.
- The second implemented RCM addressed supply fan speed control, remedying failures in a variable frequency drive, a static pressure sensor, a controls transducer, and a controls analog-input module.
- The project was recognized with an Excellence in Engineering award by the ASHRAE Illinois Chapter, and was awarded the "RCx Cup" by utility administrator Nexant for the greatest annual energy savings.

