

VALUE PROPOSITION

HEALTH CARE

SOLUTIONS

- Allen-Bradley® PowerFlex® 400 AC Drives installed on fans in HVAC system

RESULTS

- Energy Savings—Reduced HVAC-related energy costs 15 percent by installing AC drives on air handling unit fans
- Cost savings enabled full payback of system in less than six months
- NYSERDA rebate paid for 50 percent of system cost due to estimated energy savings

NY HOSPITAL REDUCES HVAC ENERGY COSTS BY 15 PERCENT

USES ENERGY EFFICIENCY REBATE TO PAY FOR NEW ALLEN-BRADLEY® POWERFLEX® AC DRIVES



Lewis County (NY) General Hospital Installed PowerFlex® 400 AC Drives to Reduce Electric Use in the Facility's HVAC System

BACKGROUND

Lewis County General Hospital and Residential Health Care Facility in Lowville, N.Y., is a unique county-owned and operated hospital offering 54 acute care and 160 long-term care beds. Unlike many county-run hospitals, Lewis County General is self-sufficient. It operates on funds generated by utilization of services. Therefore, the hospital administrators are always on the lookout for ways to decrease overall operating costs and find ways to run the facility more efficiently

Richard Schneider, maintenance supervisor for the hospital, knew the facility's HVAC system was ripe for improvement due to the age and inefficiency of the system, which was a variable air volume system that used discharge air dampers.

"We were getting charged for excessive demand by our utility

because we would run the HVAC system 24 hours a day during the summer," said Schneider. "We knew there were ways to improve the HVAC system's energy efficiency, but we had to find a creative way to pay for it."

CHALLENGE

The hospital maintenance staff knew it could lower the amount of energy consumption the system used but needed assurance that patient care and comfort would remain at the highest level. Additionally, any improvements had to be balanced with equal payback in energy savings, meaning energy costs had to be reduced enough to pay for purchasing new equipment.

The hospital's HVAC system relied on a closed-loop chiller, which included an on-site cooling tower and frequent air exchangers, as required by the Joint Commission on Accreditation for Health Care Organizations. The closed-loop system used three loops that pumped water through the air handlers and over cooling coils to lower the temperature of the air. Fans moved the cool air from the air handler through the facility's ventilation system to individual rooms, where climate is controlled by individual thermostats. Because the fans ran at 100 percent every day, the facility used considerably more electricity than necessary.

SOLUTION

Lewis County Hospital installed a computer-based energy management system to track temperatures and energy use throughout the facility. The

data the system collected helped assess where improvements could be made, and the fans moving cool air through the HVAC system were proven to be a prime candidate for upgrades.

"The system showed through carbon dioxide sensors that we didn't necessarily need them to run full ventilation at all times," said Schneider.

Schneider worked with electrical distributor Baldwin-Hall to determine how to reduce the amount of energy the fans consumed, and the distributor also found an innovative way to pay for the upgrade.

"Baldwin-Hall recommended installing Allen-Bradley® PowerFlex® 400 AC drives on the supply and return fans of the air handler to reduce energy consumption," said Schneider. "They also worked with us to determine how we could finance the drives, knowing we had to demonstrate a solid energy payback to justify the purchase"

The PowerFlex 400 AC drives are engineered and designed to help building managers solve their energy consumption and fan control problems. The drives integrate with building automation, energy management and HVAC systems to optimize fan and pump performance throughout facilities, which results in lower total costs of building automation.

Baldwin-Hall helped Lewis County work with the New York State Energy Research and Development Authority (NYSERDA) to take advantage of the New York Energy Smart rebate

program, which is designed to encourage energy efficiency and reduce consumption by offering rebates to utility customers who purchase energy-efficient technology.

"NYSERDA provided a rebate on 50 percent of the cost of the system," said Schneider. "We were able to reduce our energy costs, as well as help pay for the cost of the upgrade with the rebate, convincing us to move forward on the project."

RESULTS

The total cost to purchase and install the drives on four air handlers in the HVAC system was \$32,000, with NYSERDA paying for half of the total cost based on the projected energy savings. The hospital received more good news when it discovered that engineers had underestimated the projected energy savings by nearly 50 percent.

"We estimated reducing the HVAC system's energy by about 8 percent," said Scheider. "As it turned out, we reduced costs by about 15 percent."

The energy savings gave the hospital enough savings to recoup the drives investment in less than six months.

"Now we're saving additional dollars on top of the rebate and estimated cost savings. The drives have already paid for themselves and more."

The results mentioned above are specific to Lewis County Hospital's use of Rockwell Automation products in conjunction with other products. Specific results may vary for other customers.

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Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe/Middle East/Africa: Rockwell Automation, Vorstlaan/Boulevard du Souverain 36, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846