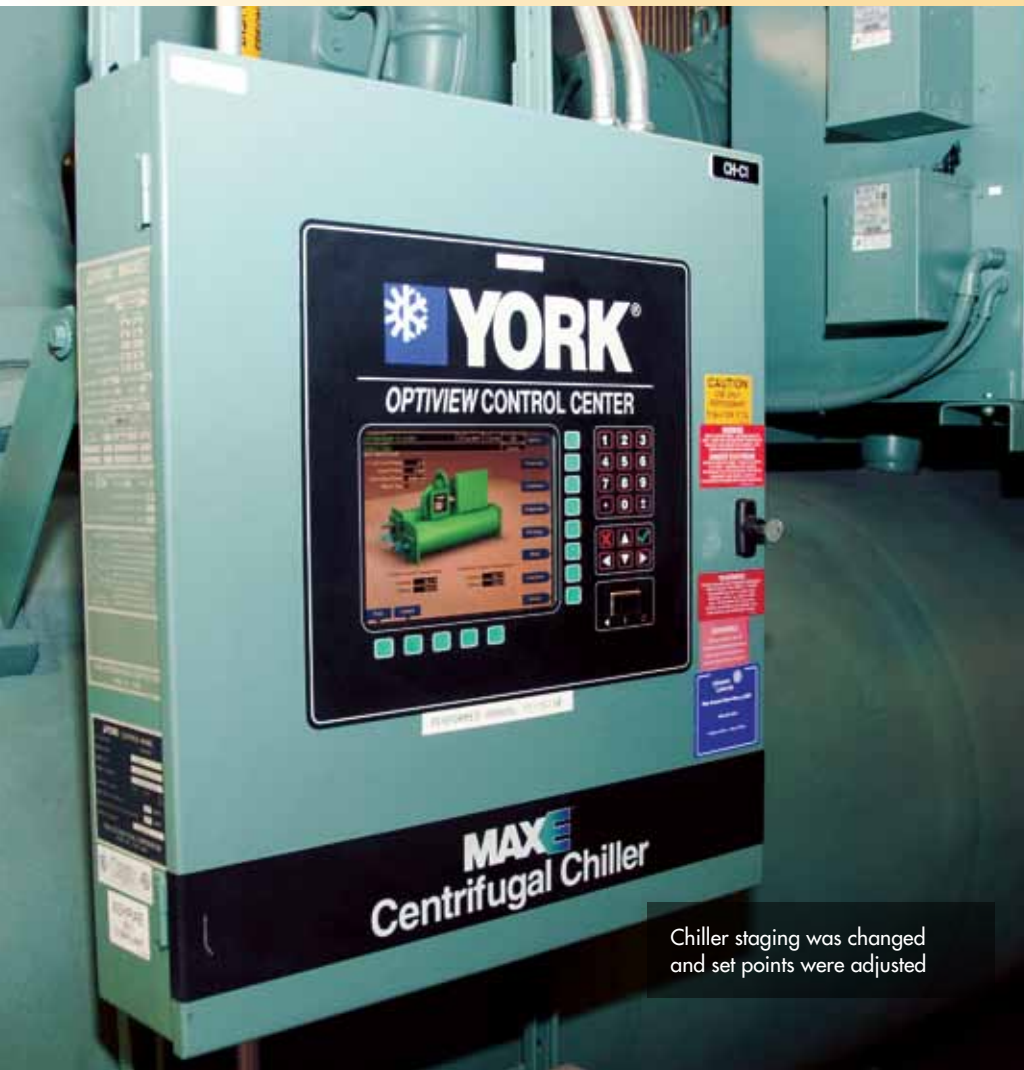




Pictured above, Eloyed Griego, Facilities Services Director, Banner Estrella



Chiller staging was changed and set points were adjusted

BANNER ESTRELLA OPTIMIZES HEALTH CARE THROUGH ENERGY EFFICIENCY

“Retrocommissioning” may sound old-school, but for one hospital in the West Valley, it’s a thorough, contemporary approach to improving major facilities’ system performance and creating an optimal health care environment.

Banner Estrella Medical Center was the first participant in the SRP PowerWise™ Retrocommissioning Solutions rebate program. The project encompassed a detailed system audit to identify an integrated series of low-cost energy-efficiency measures that reduced Banner Estrella’s carbon footprint, enhanced the sustainability profile of the medical campus, and significantly trimmed energy expenses and operating costs.

“Retrocommissioning is a smart, comprehensive, cost-effective solution to facility energy management and building operation,” said Eloyed Griego, Banner Estrella’s Facilities Services Director. “We learned how to reduce wear and tear on major systems, such as HVAC equipment, and better utilize the energy resources available to us.”

RETROCOMMISSIONING DEFINED

Retrocommissioning is a systematic process of identifying ways to improve major building operating components, such as those for the heating, ventilation and air-conditioning (HVAC) system. Done properly, retrocommissioning enhances the existing system's performance rather than relying on major equipment replacement. It's a process that helps extend a building's life cycle between construction and major renovation.

Retrocommissioning can help uncover problems, defects and deficiencies in existing systems while slowing the natural entropy that causes degradation of mechanical systems. This process typically targets:

- HVAC components, including checking economizers, confirming and adjusting set points for temperature and static pressure, verifying system scheduling, and eliminating any simultaneous heating and cooling
- The central plant, including sequencing and scheduling various systems, and using chilled- and condenser-water reset strategies
- Lighting systems, including fine-tuning existing lighting controls

Retrocommissioning employs a collaborative approach wherein the technical team works with the owner, management, facility staff, contractors and consultants to bring the systems back into and up to high-quality performance. Throughout the process, systems are tested and the performance is documented. The building's operations and maintenance personnel also are trained to operate and maintain the renovated systems.

THE RESULTS

- More than \$100,000 in first-year energy savings
- Payback of less than six months

BANNER ESTRELLA A 'PERFECT PATIENT'

Banner Estrella Medical Center is a 214-bed nonprofit community hospital that serves the West Valley communities of Avondale, Buckeye, Glendale, Goodyear, Litchfield Park, Peoria, Surprise, Tolleson and west Phoenix. Banner Estrella opened in January 2005 and now comprises a full-service acute-care hospital, medical office building, conference center and maintenance building. The medical campus has 485,000 square feet of facilities on 50 acres.

Because the health care industry is energy-intensive, energy management opportunities abound for hospitals. According to ENERGY STAR®, every dollar a nonprofit health care organization saves on energy is equivalent to generating new revenues of \$20 for hospitals or \$10 for medical offices. By saving money on energy costs, the medical center can focus dollars elsewhere — such as on improving patient care and pursuing medical advancements.

"At Banner we have a reputation to uphold," Griego said. "We've been rated one of the top 10 health systems in the nation based on clinical performance, according to Thomson Reuters, an organization that evaluates the cost and quality of health care."

"We were looking for ways to 'green up' our campus by increasing energy efficiency and lowering our carbon footprint," he said. "We considered a number of methods but weren't really sold on any of them."

"Then our SRP account manager, Janie Mollon, told us about Retrocommissioning Solutions. Janie is a great resource for us and always keeps us updated about available SRP programs and offers."

According to Mollon, "Banner Estrella was a perfect candidate for SRP's Retrocommissioning Solutions rebate program because of the square footage, age of facilities and high energy use. It's a collaborative process, and the Banner Estrella Facilities Services staff was keen on making things happen."

"We had heard about similar concepts, but we liked SRP's approach and the process Janie outlined for us," said Jim Mauldin, Banner Estrella's Plant Operations Supervisor.

"We really valued the holistic concept of analyzing and treating an entire building rather than just parts of it. After her initial discussion with us, Janie brought in the Nexant staff to explain the retrocommissioning process step by step and helped us complete the necessary paperwork."

Nexant Inc. is a global engineering consultant under contract with SRP to administer the Retrocommissioning Solutions program. Nexant manages the engineering firms that provide program-funded retrocommissioning analysis.



From left, Eloyed Griego, Facilities Services Director, Banner Estrella; Scott Wall, Senior Project Engineer, Nexant Inc.; Jim Mauldin, Plant Operations Supervisor, Banner Estrella; and Janie Mollon, Key Account Manager, SRP



Three chillers help keep patients, doctors and staff comfortable year-round

“The Retrocommissioning staff members were very thorough and professional,” Mauldin said. “After closely examining our facilities and systems, they came back with a number of recommendations and explained the rationale for each proposal. We appreciated their low-pressure approach; there was no big sales pitch.”

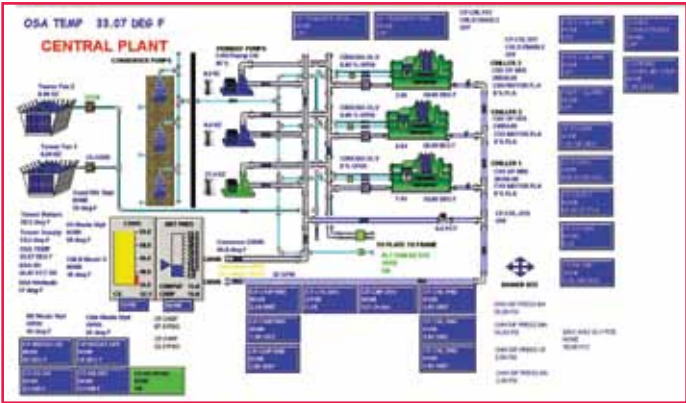
**DIAGNOSIS AND TREATMENT:
BEST PRACTICES PAY DIVIDENDS**

The major finding of the retrocommissioning process was that Banner Estrella’s HVAC systems were providing more airflow than necessary.

“We thought we had optimal airflow, but the diagnostics showed we were creating a strain on our HVAC equipment,” Griego said. “The engineering firm hired through the SRP Retrocommissioning program showed us how to make airflow more efficient without compromising patient or staff

environment. By decreasing fan speeds, we could achieve the same level of comfort with less air and less energy.

“Retrocommissioning process recommendations targeted HVAC fans, the chiller plant, air handlers and reheat components,” he added. “We lowered our natural-gas usage by lowering the demand on our reheat system and improved water consumption in the cooling tower because of the process improvements, with a net benefit of using less water for the same impact.



Energy management control system’s central plant monitoring screen

“Overall, it was quite an education — we learned about best practices for building operation and what it takes to establish high-functioning facilities. HVAC systems make up about 45% of a typical health care facility’s energy use and are a crucial consideration when it comes to the development of a healing environment that is safe, comfortable, affordable and energy-efficient.

“We also really appreciated SRP efforts to make this happen within our budget window,” Griego said. “Generally, a project like this can take six to eight months, but SRP accomplished it in about three months to accommodate our corporate budget and planning parameters.”

Griego noted that although Banner Estrella implemented a majority of the diagnostic recommendations, not all of those left on the table will remain unaddressed.

“We will revisit the remaining suggestions periodically,” Griego said. “SRP has been a great partner, and Janie will continue to touch base with us and provide updates on how we can continue to improve.”

Mollon said Banner Estrella’s dedication was key to the project’s success.

“This project was successful because of the major commitment of time and oversight management by the Banner Estrella facility staff, including Eloyed and Jim,” Mollon said. “Rather than a Band-Aid fix to maintenance, retrocommissioning is a long-term, high-value solution. Retrocommissioning was so successful at Banner Estrella that Banner Health is adopting this approach at their other facilities.”

SRP OFFERS REBATE PROGRAM FOR RETROCOMMISSIONING

SRP PowerWise™ Business Solutions offers a portfolio of rebate programs providing a wide range of energy-efficiency opportunities, including rebates for technical assistance and equipment installation.

The SRP Retrocommissioning Solutions program is intended for customers committed to spending \$10,000 or more to implement identified measures with an estimated total project simple payback of two years or less based on electricity savings.

Retrocommissioning Solutions is a “service-rebate” program — the analysis, diagnostics and technical assistance provided as part of the process act as customer rebates and are 100% funded by SRP. The building’s operations and maintenance personnel are responsible for implementing identified measures and operating and maintaining the renovated systems.

This program is designed for facilities that are at least 5 years old with:

- 75,000 square feet or more of conditioned area
- Central plants
- A history of high energy use

- A functional and serviceable energy management control system or direct digital control system
- Functional equipment not in need of repair or replacement
- A demonstrated commitment to participate in the program

In addition to the program service rebate, participating customers typically realize the following benefits:

- Electricity savings of up to 15%
- Extended equipment life
- Operations and maintenance productivity gains
- Improved comfort in buildings
- Indoor air-quality enhancements

SRP rebate programs are operated on a first-come, first-served basis until all funding has been committed. Customers are eligible for as much as \$300,000 in rebates per program year.

Customers must apply for the rebates before implementing energy-efficiency measures, including purchasing, ordering, or installing equipment or services. To learn more, please visit savewithsrpbiz.com, contact your account manager or call the program hotline at **(602) 236-3054**.

BANNER HEALTH ONE OF NATION’S LARGEST

Banner Health is one of the nation’s largest nonprofit hospital systems. Based in Phoenix, Banner has 23 hospitals and health care facilities in seven states: Alaska, Arizona, California, Colorado, Nebraska, Nevada and Wyoming.

Nationally recognized for its patient-safety efforts, Banner Health has been honored as one of the top 10 health systems in the United States. The recognition from Thomson Reuters, a leading provider of information and solutions to improve the cost and quality of health care, is based on clinical performance. Banner also was ranked seventh among integrated health networks, according to health care analytics organization SDI and *Modern Healthcare* magazine.

In addition to traditional health care services, Banner offers physician services and hospice and home care, and provides more than \$80 million a year in charity care.

Banner Estrella Medical Center, a 214-bed acute-care facility in the Southwest Valley, employs about 1,500 health care professionals and partners with more than 700 physicians and 250 dedicated volunteers who serve the growing West Valley communities.

Banner Estrella offers an array of services, including heart care, general surgery, medical imaging, orthopedic surgery, emergency services, and a comprehensive women and infants services program. It also provides such state-of-the-art technology as iCare, a telemedicine program that provides an extra layer of monitoring for patients in intensive-care units.

Learn more at bannerhealth.com.



Banner Health®