

Pala Casino Spa & Resort

Pala, California

October 2015

HVAC and controls system upgrades, and energy management strategies result in \$338,000 of annual savings and rebates of more than \$238,000.

Challenge

As the Pala Casino Spa & Resort grew in popularity, it was expanded in phases to become an entertainment facility with a complete spa and resort. Along with its expansion came the challenge of integrating additional systems. "We added rooftops, then built the cooling tower and central plant, all in pieces," said Garlon Banks, Vice President of Facilities, Pala Casino Spa & Resort. "We needed a building management solution to monitor and control all of our systems, keep up with changes, and study energy use trends." Aligning with its strong commitment to sustainability, the resort sought a partner who, not only had the expertise to help it realize a more efficient use of energy and resources, but also one that shared its environmental values.

Solution

Based on a long-standing relationship, the facilities team for the Pala Band of Mission Indians contacted Trane to discuss the upgrades. As part of the Trane Intelligent Services portfolio, an Energy Assessment was conducted to evaluate energy use patterns, system operation, and utility data. A 3-D Energy Optics report was reviewed. After analyzing metrics and the ROI for nine energy-saving opportunities, the facility moved forward with a central plant optimization, kitchen exhaust upgrades, and controls improvements.

Financing upgrades with savings

Trane worked with San Diego Gas & Electric (SDG&E) to craft an On-Bill Financing agreement that allowed Pala Casino Spa & Resort to invest in efficiency upgrades and repay the funds through their utility bill. With On-Bill Financing, the site was able to work with a zero percent interest loan, spreading out payments to equal the energy savings. Pala Casino Spa & Resort anticipates that there will be a net zero change to their normal electric bill over the finance period.



Pala Casino Spa & Resort includes a 100,000 sq ft casino, a 507-room hotel, a full-service spa and fitness center, a swimming pool, eleven restaurants, and 40,000 sq ft of meeting and convention space.

Optimizing system operations

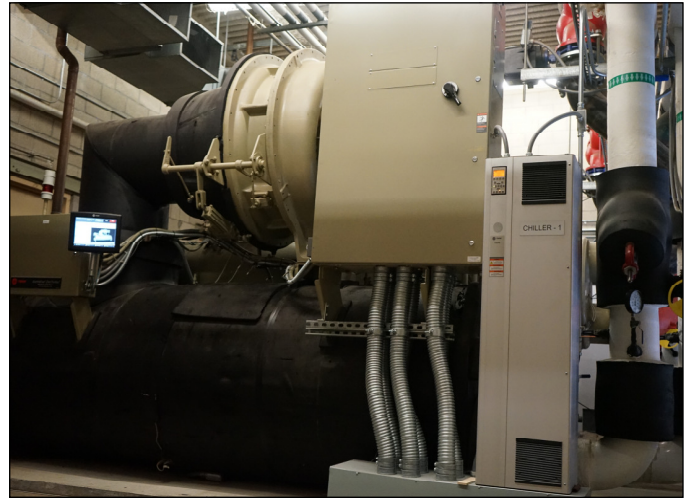
The central chiller plant was converted from a primary-secondary to a variable-primary flow system, eliminating pumps, lowering capital and maintenance costs, and providing greater system reliability. Adaptive Frequency™ Drives (AFDs) added to the two 500-ton Trane® CenTraVac® chillers in the plant maximize efficiency and reduce power consumption by adapting compressor motor speed and inlet guide vanes to chiller temperatures. Large touch screens on Tracer® AdaptiView™ chiller controls convey at-a-glance feedback on status and alarms, with detailed reports presenting data to document energy efficiency. Kitchen exhaust systems in the restaurants were optimized using sensors to regulate fan motor speeds and variable frequency drives to control ventilation hood operation.

Managing energy use

Pala Casino Spa & Resort uses a multitude of Trane Intelligent Services to manage energy use. Energy Performance helps optimize building performance with advanced energy analytics to transform data into actionable recommendations, discover energy waste, and allow the resort to make real-time decisions to trim costs. Building Performance provides ongoing collection, analysis, and reporting of site operational data. Trane analyzes system performance remotely and provides recommendations to reduce costs, enhance comfort, and improve equipment life. With Active Monitoring, Trane technicians, on duty 24/7, monitor systems, analyze alarms, and address issues remotely or forward to a Trane service office for resolution.

Monitoring and controlling building systems

A Tracer® SC building automation system (BAS) provides flexibility to monitor and manage building systems from virtually anywhere, using a web-connected device, such as a tablet or smartphone. Facility managers use the BAS to perform scheduling, adjust set points, manage alarms, troubleshoot issues and analyze data. Third-party optimization software monitors the systems and communicates adjustments to the BAS, helping to maintain comfort and reduce energy use. Tracer® ES, a web-based systems integration solution, provides an enterprise-wide view and control over all systems, enabling the resort to manage multiple buildings as a single enterprise from any web-connected device. "Our business never closes. We have to maintain the comfort level," said Banks. "Our meeting rooms aren't always occupied, but when you get 2,500 people in a room, it changes the temperature. With the new BAS, we use the scheduling function to precool a room before an event, turn it down during the event, and move it back when the room is empty."



Adaptive Frequency™ Drives were added to the two 500-ton Trane® CenTraVac® chillers in the central chiller plant to maximize efficiency.

Results

Central plant and kitchen exhaust optimization, controls upgrades and energy management strategies have resulted in efficiency, increased comfort and significant savings for the Pala Casino Spa & Resort. First-year electrical savings is projected at \$338,000, with an energy use reduction of nearly 1,932,000 kWh, equivalent to annual greenhouse gas emissions from 280 passenger vehicles. The resort received the Energy Champion Award from SDG&E for having the largest, most successful On-Bill Financing project in California to date, and received a rebate of more than \$238,000. "It was a really pleasant experience working with Trane sales, their technical team and subcontractors," said Banks. "We are pleased with everything, but there is always more to do. We still have that list of ECMs we identified to consider for future projects."

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