



Description: When the motor of a 1500-ton chiller at Ameristar Casino in St. Charles failed, Integrated Facility Services (IFS) was contracted to develop a sustainable solution to a complex challenge. The casino's chillers provide air conditioning to the 130,000-square-foot casino and numerous restaurants, bars and an entertainment venue. As one of the largest tourist attractions in the St. Louis area, a loss of cooling can be a major loss of revenue for Ameristar Casino. Ruling out the expensive option to remove and replace the chiller as well as repairing the existing chiller, IFS executed the first chiller retrofit of its kind in North America, giving the region's largest casino a more energy efficient system.

Scope of Work:

Ameristar had enough redundant cooling with three other 1,500 tons chillers, so that when the chiller failed there was time for in-depth strategizing to meet the casino's long-term goals. Ameristar desired a more energy efficient and smaller tonnage chiller capable of running at a greatly reduced capacity. The casino's managers also wanted a chiller that could be started anytime without incurring a high peak demand charge. The standard option of removing the existing chiller and installing a new chiller was quickly ruled out because it would require the expensive and disruptive demolition and removal of walls, setup and use of a crane and reconstruction of walls. Repairing the existing compressor to its previous condition would not increase energy efficiency.

Solution Provided:

After reviewing several other compressor alternatives, IFS's engineers contacted long-time project partners, Micro Control Systems Inc (MCS), a global provider of industrial control panels and the North American Distributor of Hanbell compressors. The team developed a plan to replace the old constant-speed single compressor with two, 450-ton, variable-speed magnetic bearing centrifugal compressors. The highly efficient Hanbell RTM 90 oil-less compressors use a Micro Control System's MCS-Magnum controller to operate the chiller safely and efficiently.

HIGHLIGHTS

PROJECT TYPE:
Retrofit

CLIENT:
Ameristar