

VFD (Variable Frequency Drive) Controllers Helps Deliver Energy Savings with Sustainable Results at a Prominent Resort in Waikiki



CASE STUDY - PUMPS AND VFD's



BACKGROUND

A Prominent Starwood resort in Waikiki Hawaii is a modern monument to traditional Hawaiian hospitality. The award winning Infinity Pool was featured in "CNN's article on American's Most Amazing Hotel Pools." This full service hotel has 1636 guest rooms, 80,000 gallon edge pool, 140,000 gallon super pool, and two 2,500 gallon spas. Occupancy rates are near 100% with high bather loads year round.

The Resort was using older three phase pumps for the main filtration circulation pumps. The pumps were running 24/7 and were meeting minimum turnover requirements. The Director of Engineering and Chief Engineer were looking for ways to increase water quality and operational efficiency.

In addition, they found challenges related to water clarity, high bather loads, high equipment maintenance and replacement costs.



RESULTS

SOLUTION

The Director of Engineering and Chief Engineer had previous experience with VivoAquatics and requested a facility audit including energy consumption evaluation. A complete audit was performed and the results were significant.

VivoAquatics assessed the resorts existing pool and spa equipment and recommended higher efficiency pumps and VFD's to address water clarity and operational challenges. VivoAquatics worked with the Department of Energy on a special incentive rebate program. The VFD's and pumps were a small investment to provide the following benefits:

- Improved turnover rates which helped reduce backwashing periods
- Automated controls to eliminate manual adjustment of pumps
- Higher efficiency pumps capable of supplying higher flow rates at peak occupancy
- VFD controls allowed for proper adjustment to system hydraulics. Discharge valves were adjusted to allow for ideal flow conditions and reduced head pressure

"VivoAquatics has been a great partner in our efforts to become a more sustainable resort. Reducing electrical costs and water usage is core to our operations. This success is another reason why the property views VivoAquatics as a long-term strategic aquatics partner."

Chief Engineer

BENEFITS	ECONOMIC RESULTS
Reduced annual energy costs through ideal flow rates and consistent amp draws.	Property is saving over 480kwh per day and reduced annual energy use by over \$49,000 per year.
Reduced water consumption through reduced backwashing while obtaining improved water clarity	The property is estimated to save over 100,000 gallons of water/
Partnered with local energy company to provide rebate and reduce overall ROI	Project ROI is 15 months, well within target rate for property ownership.