



## CUSTOMER CASE STUDY

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# The Venetian and Palazzo Resort Hotels and Casino

One of the world's largest hotels and resorts, known for award-winning sustainability practices, entrusts AVEVA to provide real-time facilities and power management solutions

## Goals

- Provide real-time status monitoring
- Design a redundant system to maintain uninterrupted electricity
- Provide visibility for all substations and equipment status
- Improve system efficiency to support green energy goals

## Challenges

- Among the largest hotels and resorts in the world covering 67 acres and 14 million square feet
- 66 substations, 62 PLCs, and staff are spread out over a large area
- Any disruption of power can result in loss of clientele and revenue

## Solution

- AVEVA™ InTouch HMI
- AVEVA™ Historian

## Results

- Power management and redundancy capabilities ensure uninterrupted power 24/7/365
- Real-time monitoring enables proactive troubleshooting and fixes
- Central monitoring of remote substations saves staff time, resulting in bottom-line savings
- AVEVA solution supports green and sustainability goals

## One of the largest green buildings in the world uses AVEVA software

The **Palazzo** is one of the largest green buildings in existence, over four times bigger than the second-largest recipient of the designation.

**Las Vegas, Nevada** – When visitors come to Las Vegas, they may expect a few surprises in the casinos or enjoy an unexpected moment of amazement during a show. But they definitely do not imagine that their lavish vacation will be disrupted in any way – especially by interruptions in electrical power. Behind the scenes, complicated systems and dedicated teams work tirelessly to ensure that everyone has a fabulous experience.

So it comes as no surprise that the complex has one of the most innovative redundant power and facility management systems ever developed in the industry. Part of the resort, The Palazzo Las Vegas, has been awarded a Silver LEED® Certificate (Leadership in Energy and Environmental Design) by the U. S. Green Building Council.

### A team focus on growth

Managing the growth of The Venetian has been a major task. Since its beginning in 1999, the other properties have been built or incorporated at a very fast pace. Distributor AVEVA West and systems integrator Electrical Systems Consultants (ESC) collaborated with The Venetian's experts to create a facilities and power management software solution to provide real-time status monitoring, as well as support for the other critical needs of the resort.

### Redundancy enhances guest experiences and protects revenue

The advanced redundant power system is fed with 138,000 volts of electricity that come directly into the complex from NV Energy, the region's power supplier. The power is broken down through two transformers and distributed to the 66 substations that serve the vast property.

## In Las Vegas, normal takes on a whole new meaning

This applies to The Venetian's power capabilities as well. The resort requires a predictable supply of power to fulfill its promise of a world-class guest experience and maintain its green credentials.

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“In Las Vegas, things operate at warp speed, and The Venetian is no exception. They added one tower after another, so we've had to respond very quickly with expansions to the system. AVEVA has allowed us to do that cost-effectively and quickly.”

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**Kevin Hartig**  
President of ESC

For instance, the initial system was based on AVEVA InTouch HMI, which provides an easy-to-use, intuitive view of the resort. Then ESC assisted with the addition of the AVEVA Historian to expand real-time and historical data collection, as well as reporting capabilities. Future plans have been mapped to other AVEVA components that can be smoothly integrated when the time is right.

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“When we added The Venezia, the main reporting of AVEVA saved us. We actually took the reports to see where we could add power to the other buildings and to see the usage. Then when we built The Palazzo, we used it to see how much more power we could use and where we can save it.”

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**Jerry Jagers**  
Senior Project Manager, The Venetian Hotel Resort Casinos

All substations are double-ended and work in conjunction with 62 PLCs which constantly monitor the flow of electricity.

If one of the transformers is not sending power, the PLCs communicate this information through the AVEVA software. Such a fault would trigger the substations to react and pull power from the other transformer to minimize fluctuations and eliminate downtime. The software also works through the PLCs to perform real-time load shedding to adjust generator capacities. Plus, AVEVA software also monitors standby generators that are available to supply electricity to high-priority systems in the event of a complete loss of power.

The redundancy system and its sophisticated management capabilities are critical to The Venetian. It's imperative that guests enjoy continuous electricity to power their Venetian experience – because, in such a competitive environment, any inconvenience for guests can mean lost business. An extended loss of power can mean billions of dollars in lost revenue for the resort.

#### Real-time monitoring brings ease of use and efficiencies

The AVEVA solution's real-time status monitoring capabilities enhance The Venetian's ability to meet the very high expectations of their visitors. With the system, facility managers can view power usage at every substation on the property. The status of all equipment is visible onscreen. Faults and alarms appear as they happen in an easy-to-read graphic format, allowing workers to make rapid decisions and respond quickly to optimize energy usage and prevent service disruptions.

“One thing we can't do is afford to be down at any time. If we lose any power or disrupt the guests, they leave and they don't come back.”

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Jerry Jagers

Senior Project Manager, The Venetian Hotel Resort Casinos

#### Enabling proactive management

The solution has been entrusted with delivering superior capabilities, ease of use, and reliability to The Venetian's management and staff. They, in turn, are responsible for providing an enjoyable experience to guests and visitors. It's a partnership that is paying off handsomely for today and for the future.

This increased level of visibility has brought dramatic gains in efficiency for the enormous campus. In many cases, operators can make corrections at a central station, eliminating time-consuming trips to remote locations. When personnel does need to go to a site, they know exactly what they are looking for, so issues are resolved more quickly. This saves time as well as costs.

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“AVEVA has improved our efficiency to stay on top of maintenance. We go in and look at the gear online, and we've spotted problems before they've arisen. So we've had a chance to rectify those problems before we had downtime.”

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Dale Mitchell

Electrical Supervisor

In the event of an emergency, the AVEVA software can speed up the response. While members of the team are monitoring an alarm event at the station, others can be dispatched to the location of concern. The central team can be in constant contact to communicate current conditions and provide additional information to minimize power problems.