

# The Venetian and Palazzo Resort Hotels & Casino

www.venetian.com

*“(The Wonderware solution) is a lifesaver.  
I can’t see not having it.”*

Jerry Jagers  
Senior Project Manager



## World’s Largest Resort Relies on Wonderware Solution for Non-Stop Power

### Goals

- Provide uninterrupted power to the entire resort complex
- Maximize the efficiency of widespread equipment and workforce
- Enable flexibility and adaptability to accommodate rapid growth

### Challenges

- Biggest hotel and resort 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

### Wonderware Solution

- Wonderware InTouch HMI
- Wonderware Historian
- Wonderware ActiveFactory

### Results

- Power management and redundancy capabilities ensure uninterrupted power 24/7/365
- Real-time monitoring enables proactive trouble shooting and fixes
- Central monitoring of remote substations saves staff time, resulting in bottom line savings
- Reporting and record-keeping capabilities support rapid planning for expansion
- Wonderware solution supports green and sustainability goals



Software Solutions for Real-Time Success<sup>SM</sup>

**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.

One of the brightest stars on the Strip is The Venetian Resort Hotel family of properties. With The Venetian, The Venezia Tower, the Sands Expo Convention Center and The Palazzo Las Vegas, these properties comprise the largest hotel and resort in the world, covering 67 acres and approximately 14 million square feet of facilities.

And so it comes as no surprise that the complex has one of the most innovative redundant power and Facility Management Systems ever developed. 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. According to the Council, The Palazzo is not only the largest green building in existence, but is over four times bigger than the second-largest recipient of the designation. A commitment to green and sustainable processes can be seen throughout the resort.

### **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, Wonderware West, and systems integrator, ESC Engineering, have collaborated with The Venetian's experts to create a facilities and power management software solution to provide real-time status monitoring as well as to support the other critical needs of the resort.

President of ESC Engineering, Kevin Hartig, describes the effort, "In Las Vegas, things operate at warp speed, and The Venetian's no exception. They added one tower after another, so we've had

to respond very quickly with expansions to the system. Wonderware has allowed us to do that cost effectively and quickly."

For instance, the initial system was based on Wonderware In Touch® Human Machine Interface (HMI), which provides an easy-to-use, intuitive view of the resort. Then ESC Engineering assisted with the addition of the Wonderware Historian to expand real-time and historical data collection and reporting capabilities. And future plans have been mapped to other Wonderware components that can be smoothly integrated when the time is right.

According to Jerry Jagers, The Venetian's Senior Project Manager, "When we added The Venezia, the main reporting of Wonderware 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."

### **Redundancy Enhances Guest Experiences and Protects Revenue**

In Las Vegas, normal takes on a whole new meaning. And this applies to The Venetian's power capabilities as well. The resort requires a predictable supply of power around the clock to fulfill its promise of a world-class guest experience.

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.

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 Wonderware 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, Wonderware 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 Wonderware solution's real-time status monitoring capabilities enhance The Venetian's ability to meet the very high expectations of their visitors. With the system, facilities managers can view power usage at every substation on the property. The status of all equipment is visible on screen. Faults and alarms appear as they happen in an easy-to-read graphic format.

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. And even when personnel do 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.

Dale Mitchell, Electrical Supervisor, explains, "Wonderware 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."

In the event of an emergency, the Wonderware software can speed up response. While members of the team are monitoring an alarm event at the

station, others can be dispatched to the location of concern. And the central team can be in constant contact to communicate current conditions and provide additional information to minimize power problems.

### **Supporting Sustainability and Success**

By enabling proactive management of The Venetian's power and providing ways to maximize staff for time and cost savings, the Wonderware software fits nicely with the resort's focus on green and sustainability goals. The solution has been entrusted with delivering superior capabilities, ease of use and reliability to The Venetian's management and staff. And 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.





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