

# OUC Saved Over \$1M Using Emerson Installation Engineering and Services While Boosting Efficiency and Security

## RESULTS

- Saved more than \$1M (USD) by using Emerson installation engineering and services rather than a third-party engineering firm
- Realized an additional \$51K initial project savings as well as an estimated annual savings of more than \$370K due to drawing, troubleshooting, and process efficiency improvements
- Maintained 100% operational status while replacing common system controls
- Automated previously manual antivirus and patch management processes to create a more secure operating environment



## APPLICATION

470-MW coal-fired power plant with a Babcock & Wilcox boiler and Westinghouse steam turbine

## CUSTOMER

Orlando Utilities Commission (OUC), Curtis H. Stanton Energy Center (Stanton) Unit 2, located in Orlando, Florida

## CHALLENGE

As Florida's most-reliable power plant, the Stanton Energy Center has earned a well-deserved nickname: "The Reliable One." But aging and obsolete controls and equipment on Unit 2 threatened plant reliability. Notable issues included:

- Spurious plant trips that were difficult to troubleshoot with existing controls
- Outdated main control room benchboard
- Inadequate cybersecurity protection
- A graphical user interface that was not user friendly and lacked functionality
- Inability to remotely monitor plant operations and trend points
- Insufficient energy management on the precipitator

*"We elected to modernize our control system without the use of a third-party engineering firm — a major departure from the norm. We estimated that this alone saved us more than \$1M. We relied on Emerson's installation engineering and services combined with our own internal resources to achieve project success. We not only maintained 100% operational status throughout the project, but realized significant additional savings while boosting efficiency and security."*

**Jack Lyons**  
Project Engineer  
Orlando Utilities Commission



OVATION

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**EMERSON**  
Process Management

### SOLUTION

In 2013, Orlando Utilities Commission (OUC) replaced the Stanton Unit 2 and common legacy control systems, as well as the boiler feedpump controls with Emerson's Ovation™ technology. After achieving commercial operation in November 2013, Ovation now directly controls and monitors the unit's boiler, burner management, steam turbine, boiler feedpump turbine, balance-of-plant, scrubber, selective catalytic reduction, and sootblower processes. Additionally, Ovation directly controls and monitors the common processes shared with the other Stanton generating units including the water plant, cooling tower blowdown treatment plant, ash handling, ball mills, and sludge conditioning systems. In all, Ovation manages over 12,500 hardwired I/O points.

OUC is a very lean municipal entity, with just two controls engineers on staff. OUC implemented the control replacement project without use of a third-party engineering firm – a major departure from the norm and a move that is estimated to have saved the utility over \$1 million. To achieve project goals, OUC relied on the expertise of the Emerson project team and its own internal resources.

Critical to the project's success was maintaining 100% operational status while replacing controls on the common systems. Stanton is a zero liquid discharge plant, with the water system supporting a total of four units – two coal-fired units, as well as the 2x1 and 1x1 combined-cycle plants located on site. The common systems, especially the water plant, were required to remain in operation in order to serve the other units and meet the electricity demands of customers. Emerson was able to cut over to the new Ovation common controls without impacting megawatt production.

Another logistical hurdle was reverse engineering the existing controls. The previous system was not self-documenting, causing numerous issues. CAD drawings were not always up to date and in some cases there were multiple copies. In other cases, logic was running with no documentation at all. The boolean and analog control logic operated in the controllers while the additional ladder logic was executed in the I/O modules. OUC estimated an initial savings of \$51,000 by not modernizing the outdated legacy drawings at the onset of the project. Emerson re-engineered the non self-documenting logic into Ovation.

OUC estimates additional savings of over \$370,000 per year attributed to troubleshooting efficiencies, eliminating the need to manually update logic drawings through the use of Ovation's self-documenting feature, and reducing power consumption related to the electrostatic precipitator energy management system. Also, the project reduced the potential for spurious trips and significantly increased operator efficiency.

The control system's comprehensive, integrated cyber-security functionality provides OUC with the cyber-security tools necessary to help them comply with evolving NERC CIP regulations. Adding anti-virus and patch management capabilities has reduced costs by automating previously manual processes while creating a more secure environment.



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