

BOP DCS Migration in Combined Cycle Power Facility

MAVERICK performed a complete balance of plant (BOP) DCS migration from Westinghouse WDPF to the PlantPAX[®] control system by Rockwell Automation. Utilizing the DCSNext[®] process, the MAVERICK team delivered enhancement in operation control and on-time restart of the facility after the I/O cutover.

Main Objective

The customer partnered with MAVERICK to perform a DCS migration of an existing proprietary Westinghouse WDPF BOP control system to a non-proprietary control system without any scheduled outage of the facility. A human machine interface (HMI) for systems outside of the BOP was to be incorporated into the new control system.

Customer Results

The customer experienced no unscheduled outages during the migration process, and the facility started up on schedule. The facility ramped to full power on the first day of operation. There have been fewer outages due to the enhanced control and speed of the control system.

Application Description

The BOP includes the following units:

- » Heat Recovery Steam Generator (HRSG)
- » De-aerator and Feed Water System
- » Gas Compressor System
- » Compressed Air System
- » Water Treatment Plant

Non-BOP systems migrated into the PlantPAX DCS include the following units:

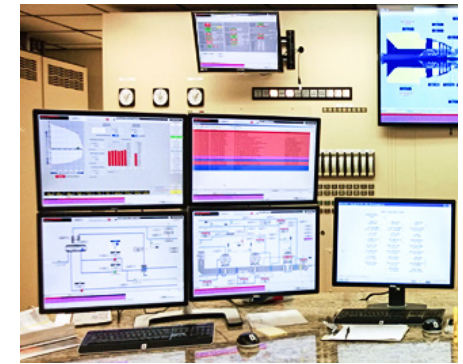
- » Turbine Control
- » Water Distiller Plant
- » Ammonia Chiller Plant

The customer needed a BOP DCS system migration for the following reasons:

- » Decreasing availability of hardware
- » Serviceability issues
- » Proprietary networks
- » Proprietary operating system with no vendor support
- » Failed historian server
- » No automated report generation
- » Downtime issues

Features of the new BOP DCS platform:

- » State of the art hardware
- » Open control networks
- » Hardware availability in nearby cities
- » Replacement of I/O and processors during operations
- » Microsoft desktop and server operating systems
- » World class historian server
- » HART smart transmitter capable I/O



The DCSNext process began with a comprehensive analysis of the existing control system:

- » MAVERICK's Westinghouse WDPF engineers analyzed the existing system and developed a functional specification.
- » The team took a fresh look at plant operations with the customer's operations and maintenance staff. A new and enhanced functional specification was then developed for the BOP DCS system.
- » The Wonderware HMI applications for the turbine control, chiller and distillation plant were also migrated into the PlantPAX DCS system.

MAVERICK's engineers analyzed the existing DCS hardware system and developed a low-risk hardware replacement plan.

Westinghouse WDPF redundant processor drops were replaced with redundant ControlLogix[®] L73 processors using Device Level Ring (DLR) for I/O communications.

Westinghouse Numa-Logic I/O was replaced with 1756 ControlLogix I/O with new wiring from I/O cards to field termination blocks.

Westinghouse Q-Line I/O was replaced with 1756 ControlLogix I/O with custom interface cables between Q-Line I/O swing arms and 1756 I/O cards. This will left existing field terminations intact and reduced wiring issues.

Application Description Continued

What makes our DCSNext process different?

- » **Improved productivity.** Leverage the latest DCS technology in order to fully utilize your assets, allowing for greater throughput across your operations.
- » **Increased profitability.** Optimize your operability through better control strategies, decreasing maintenance costs and increasing uptime to yield higher profits.
- » **Enhanced agility.** Improve your ability to react in real time and adapt to constant change, making you a stronger competitor in a global marketplace.
- » **Proven methodology.** Rest assured that our four-step comprehensive study guarantees a solution that addresses your specific needs and pinpoints improvements that yield the highest returns.
- » **Minimal downtime.** Depend on us to work around your day-to-day needs, ensuring minimal impact on your operations.
- » **Ongoing support.** Lock in the gains from your DCSNext solution through preventive and sustaining services that keep your plant operating at its best.



The MAVERICK Difference

MAVERICK Technologies developed DCSNext based on years of experience implementing all major DCS platforms in manufacturing facilities worldwide. Our process combines a comprehensive study of the challenge, a phased approach to execution and ongoing support — all to ensure your upgrade doesn't just bring you up to speed, but propels you ahead of your competition for years to come.



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