

Paper Machine Wet End Migrates to Emerson DeltaV

A pulp and paper mill partnered with MAVERICK to upgrade their control system to DeltaV, utilizing corporate standards to enable alignment of controls programming at other sites.



Main Objective

The paper mill needed to upgrade their control system for the wet end of the paper machine as well as a portion of the dry end. The best fit for their strategy and for long-term support was DeltaV DCS. Working closely with the mill's technical and operations team, MAVERICK defined the controls needs and implemented those strategies on the new system.

Customer Results

As a result of the upgrade, mill technical personnel have been able to focus more attention on process improvements as the system provides for easier process data analysis. Using corporate standards also aligned this mill with controls programming at other sites. The standardization facilitates cross-training and corporate technical support. The mill operations personnel were pleased to use the power of human-centered design (HCD) graphics to easily detect abnormal situations and reduce human error.

Application Description

- The MAVERICK team worked closely with mill personnel to fully document the existing Honeywell control system using MAVERICK standard procedures. This included extraction of the existing DCS I/O database, graphics, controls configuration and sequences. The resulting functional specification was used as a roadmap for a successful migration to DeltaV.
- Conversion of the Honeywell I/O database into the new DeltaV database was facilitated by import tools developed by MAVERICK on an in-house development system.
- Control and equipment modules were developed, each of varying complexity, using standard modules from the mill's corporate DeltaV library. This conversion was also executed with in-house toolsets developed for this purpose.
- Engineering development also included efforts for interfacing with a Modicon PLC, Rockwell PLC5, GE PLC and Metso Automation System.
- Graphics design included migrating process and overview graphics to HCD graphics. In addition, custom advanced control interfaces and display directories were created to improve the user experience.
- The MAVERICK team implemented loopback simulations to conduct operator training and verify functionality of modules.
- Complex and simple sequences were developed for the process and included graphics for monitoring and control.
- Alarming was reviewed and converted from the existing DCS. DeltaV Historian tags were created for all I/O points and integrated with the mill's environmental reporting application.
- MAVERICK used standard DeltaV cards as well as Emerson's characterization module (CHARM) technology. This allowed design flexibility so that I/O of any type can be landed at any spot in the I/O cabinets.
- MAVERICK included acceptance testing in coordination with the phased installation approach. The team provided complete checkout and startup assistance along with on-going production coverage to ensure the mill was comfortable with the new strategies and would be able to self-manage the new system.

The MAVERICK Difference

MAVERICK's DeltaV system expertise was instrumental in the success of the mill's first DeltaV implementation. By advising the customer on the new system capabilities and possible pitfalls, our engineering staff minimized start-up downtime and maximized production.

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