

Expanded Chemical Plant Process Controls Yield Benefits of Time & Labor Savings

RESULTS:

- The solution saved the customer two weeks worth of time and labor.
- The dollar value associated with this is a man-hour savings of \$2,000.
- The resulting value to the operation was an additional 6.1 million pounds of product manufactured.

Application

Automated, distributed control system for industrial organic processing of specialty chemicals.

Customer

Specialty contract chemical manufacturer, producing sulfur dioxide as well as other reaction and distillation services.

Challenge

This involved the installation of a new sulfur burner system at the facility. The production process burns molten sulfur to create sulfur dioxide (SO_2) which then is absorbed in towers converting it to ammonia bisulfite (ABS).

Ammonium bisulfate, also known as ammonium hydrogen sulfate, is a white, crystalline solid with formula HSO_4 . It is the product of the half-neutralization of sulfuric acid by ammonia (formula: $(\text{NH}_4)\text{HSO}_4$). The ABS is used to make ammonium thiosulfate (ATS), which is used as a component in fertilizer.

This facility's chemical processing system is automatically controlled by **Emerson DeltaV** and **CHARacterization Module (CHARM)** technology. DeltaV is a distributed control system that helps improve operations by harnessing predictive technologies in an easy, intuitive, and interoperable way. **Emerson Asset Management Software (AMS)** was also an integral part of the installation success.

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The success of this project relied heavily on the knowledge shared about AMS to provide live diagnostics of instrumentation and how to correlate them to issues seen within the process.



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SPECIALTY CHEMICAL PRODUCTION

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AMS provides a single application for predictive diagnostics, documentation, calibration management, and device configuration for managing field instruments and digital valve controllers.

Solution

Since this was a new installation of an expansion of plant capabilities, Novaspect engineers recommended AMS as a commissioning tool. By using its capabilities, we provided additional value to the commissioning with instrumentation set up, configuration and troubleshooting.

Benefits & Measureable Results

Combining the DeltaV CHARMS solution with AMS and the DeltaV Batch program, the operation gained measureable benefits:

- The solution saved the customer two weeks worth of time and labor. The dollar value associated with this is a man-hour savings of \$2K. The resulting value to the operation was an additional 6.1 million pounds of product manufactured.
- Customer experienced improved startup time relative to other comparable startups.
- Benefits of diagnostic and troubleshooting capabilities will shorten future repair cycles, as required.
- Process time-savings: To comply with standard procedures, technicians normally need hot-work permits to open any control cabinets. By using AMS they can bypass the permitting process and enter electronically via DeltaV, thereby avoiding physical entry into cabinets, all accomplished by using a HART communicator. The results yielded valuable time savings.
- Due to the success of this project, the customer has accelerated the use of AMS at other production facilities.

Plant Manager: "During the commissioning phase of the project, representatives from Novaspect help set up the DeltaV system. In that time, we were taught the ins-and-outs of AMS, including the alarm features and instrument templates. This provided valuable information to us to make commissioning and troubleshooting more efficient. The success of this project relied heavily on the knowledge shared about AMS to provide live diagnostics of instrumentation and how to correlate them to issues seen within the process."

Contact us today to discuss how Novaspect can improve the profitability of your operation.



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The DeltaV system's Electronic Marshalling delivers the flexibility to add I/O anywhere in the plant without affecting the control room cabinets- no re-design; no re-wiring. Now you can accommodate late project changes without adding extra costs or impacting start-up schedule. The CHARACTERIZATION Module (CHARM) technology brings unprecedented flexibility that allows field wiring of any signal type to be terminated anywhere. A CHARM is simply a single-channel component with an A/D converter and signal characterizer inserted onto the terminal block where field wires are landed.



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