

Chemical Facility Expanded & Modernized With Digital Process Automation

RESULTS:

- Novaspect provided project implementation leadership to train a relatively inexperienced project team to achieve industrial best practices.
- Customer operation experienced an improved line startup relative to similar startup projects.
- Measurably high-quality resin was produced in first batch after line startup.

APPLICATION

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

CUSTOMER

Speciality contract chemical manufacturer, producing epoxy resins and other epichlorohydrin derivative as well as other reaction and distillation services.

CHALLENGE

Customer was expanding their facility with an additional processing reactor train housed in a new building requiring Safety Instrumented Systems (SIS) intrinsically safe for hazardous conditions. All primary vessels and associated pumps, piping and control systems were custom manufactured for this service and are located within the new building.

The epichlorohydrin bulk storage tanks, located in a remote external tank farm, were designed to meet the speciality chemical contract requirements. Compared to "typical" batch epoxy reactors, the primary reactor is relatively large at 12,500 gal. which provides high throughput. A second 12,500 gal. vessel serves as a versatile container for additional secondary reaction and

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Addition of chemical processing equipment line increased production output and capabilities – both made possible by integrating DeltaV distributed control system.

The DeltaV Distributed Control System helps manufacturers improve operations by harnessing today's predictive technologies in an easy, intuitive, and operable way to connect people, processes, and production.



SPECIALTY CHEMICALS

(Continued from front side.)

treatment as needed for solvent washing and vacuum stripping of epichlorohydrin or solvent with azeotrope recovery. A third 12,500 gal. vessel adds additional post reaction flexibility.

SOLUTION

Novaspect engineers collaborated with the customer team to design a DeltaV control system fitted to the new batch process and reactor train. Despite the advantages of a brownfield expansion, the project had a tight schedule and budget constraints.

The custom configuration included DeltaV Characterization Module (CHARMS) Technology with AMS and DeltaV Batch. AMS Device Manager helps avoid unnecessary costs with a universal window into the health of intelligent field devices. It gives maintenance and operations personnel the ability to work smarter. Based on real-time condition data from intelligent field devices, plant staff can respond fast and make informed decisions on whether to maintain or replace equipment or field devices.

BENEFITS & MEASURABLE RESULTS

- Novaspect engineers provided project implementation leadership and best practices to train a relatively inexperienced customer project team.
- Customer experienced a profitable line startup relative to similar startup projects in the past.
- High quality results were produced on the first batch after startup.
- Due to the success of this project, the customer has accelerated the modernization of this and other production facility sites with similarly designed DeltaV distributed control systems. In the words of the Plant Manager: "Novaspect's process methodology enabled us to come in on time and have saleable product with our first batch."

To learn more about how we can solve your challenging process application, contact Novaspect today.



The DeltaV SIS process safety system has the world's first CHARMS Smart SIS Logic Solver (shown at right), using the power of predictive intelligence to increase the availability of the entire safety instrumented function in combination with the advantages of the Emerson Electronic Marshalling solution. All are connected to various field process measurement devices installed on integral components of the production process.



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