

Asset Optimization System Successfully Installed and Implemented at Major Polyurethanes Plant in China



RESULTS

- Improved tracking of field device status
- Implemented predictive maintenance practices
- Initiated easy field device configuration from central location
- Made device status information available throughout plant



APPLICATION

This integrated manufacturing facility includes a polycarbonate unit, a splitter for separating crude methylene diphenyl diisocyanate (MDI) into the polyurethane raw materials mono and polymeric MDI, and production units for polyurethane coating raw materials. More than 6000 HART® and FOUNDATION™ fieldbus instruments are in use on the three MDI production trains. The entire complex comprises nine separate plants employing Emerson's DeltaV™ digital automation system, with field devices from various manufacturers.

CUSTOMER

As one of the world's largest producers of polymers and high-performance plastics, the parent company develops coatings, adhesives, insulating materials and sealants, polycarbonates, and polyurethanes. New production facilities opened at the Shanghai Chemical Industry Park in September, 2006, were built with a total capital expenditure of about EUR 2.1 billion. All the major business units of this European company now have production facilities in the People's Republic of China with world-scale capacities.

CHALLENGE

China represents a very important expanding market for polymer products. As such, it was vitally important that the new production facilities in Shanghai start smoothly and achieve projected output as rapidly as possible. Three AMS™ Suite: Intelligent Device Manager systems were purchased – one for each of the three MDI units – to enable a limited maintenance staff to manage more than 6000 field devices and control valves. Plant officials also wanted a single information platform from which they could obtain up-to-date information on the condition and status of these essential assets.

More than 6000 HART and FOUNDATION fieldbus instruments on the three MDI production trains are managed by three AMS Suite: Intelligent Device Manager systems in Shanghai chemical complex.

AMS
Suite

For more information:
www.assetweb.com


EMERSON
Process Management

SOLUTION

Emerson's PlantWeb® INSTALL Services was employed to ensure correct setup and configuration of the AMS Suite systems. Consolidating all HART and fieldbus devices in the three MDI units involved establishing a database of every field device in AMS Device Manager, verifying communications with each device on the control network, and setting up initial device alarms.

Related plant maintenance personnel were trained in navigating the system in order to acquire diagnostics from any device, handle alarms, troubleshoot potential problems, and apply the rules of predictive maintenance. Since the status of field devices is easier to track using AMS Device Manager, equipment not performing up to full capability can be identified well in advance. Predictive intelligence makes it easier for plant personnel to decide when to deploy maintenance resources in the most efficient and cost-effective manner.

AMS Suite: Asset Portal™ was also installed so that management personnel could access information about the performance and condition of overall production equipment. This application consolidates information from hundreds or even thousands of separate sources and organizes it on a single platform, providing a complete picture of the health and performance of all these assets.

The PlantWeb Services team from Emerson Process Management China Ltd. configured the system to view reports, which can be customized according to specific needs.

Site acceptance testing followed installation of all three AMS Device Manager systems and AMS Asset Portal. Overall, PlantWeb Services provided the means for the three MDI trains to operate smoothly, maximizing productivity while maintaining product quality and minimizing costs and energy consumption.

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