

HART® Protocol and AMS Suite Save Time and Money in New Plant

RESULTS

- 25 percent reduction in loop check time and costs
- 50 percent reduction in overall commissioning time
- Saved \$50,000 (US) in start up labor costs



APPLICATION

A new methacrylates production complex in China features 2,200 intrinsically safe HART-enabled instruments and valves supplied by multiple manufacturers from around the world. In addition, there are 330 Rosemount® temperature transmitters employing the FOUNDATION™ fieldbus protocol. This plant has been recognized for ingenuity and innovation in using the power of HART communication in real-time-applications.

CUSTOMER

Evonik Industries, a global leader in specialty chemicals, started its business in China as early as the 1930s by opening a representative office in Shanghai. There are now 20 Evonik companies and 16 production sites with some 4,000 employees in the region. The plant in Shanghai, operating as Evonik Degussa Specialty Chemicals (Shanghai) Co., Ltd., received the prestigious HART Innovative Achievement Award for 2009.

CHALLENGE

Designers of the Evonik Degussa methacrylates complex were challenged to create a general communication standard for all field devices for improved safety, availability, and control loop reliability. After studying the application of HART communications in all process operations, they chose to install HART instruments and valves throughout the facility. But it was still necessary to find a way “to take full advantage of the HART communications technology and the intelligence of smart field devices.” These devices had to be configured and integrated into the plant’s distributed control system in order to gain full-time access to valuable device and process information that might otherwise be overlooked.

“As a result of implementing AMS Device Manager, we cut loop check time and costs by 25 percent”

Luc Sterck,
Project Manager- Instrumentation

SOLUTION

Brainstorming sessions based on the use of HART in asset management systems led to the selection and implementation of Emerson's AMS Suite: Intelligent Device Manager predictive maintenance software. One of the principal reasons was the capacity of this software to communicate easily with the smart measurement and control devices connected to the DeltaV™ process automation system. The ability to communicate with control components (6300 I/O points) led to a more efficient loop check methodology in compliance with international standards.

Using AMS Suite and the QuickCheck™ SNAP-ON™ application, the installation team was able to significantly shorten the time required to check out and commission the newly installed control system as compared with the traditional method. During this stage, smart device diagnostics helped identify more than 30 valve and instrument problems that were corrected long before start up. Every loop checking step was automatically documented, and all field devices were included in a vast instrumentation database. The overall time required to achieve commissioning of the facility was reduced by 50 percent, which greatly contributed to the fast and smooth start up of the plant.

Real-time data from the intelligent HART and fieldbus devices have made possible easy configuration of field instruments from the control room, online diagnostics and status monitoring of devices, and automated documentation of calibration and configuration data in the AMS Suite database. As a result, fewer people are needed for maintenance, and easy checking/adjusting of device parameters yields better control loop tuning and less process variability.

Luc Sterck, project manager, instrumentation, said, "Our plant's commitment to predictive device diagnostics on all smart instruments will bring useful operating information to the attention of key personnel. By identifying failure-prone equipment and avoiding unexpected downtime, a high level of plant availability will be assured."

"We are now initiating a predictive maintenance program in which priority instruments such as control valves and safety instruments receive immediate attention when needed"

Luc Sterck,
Project Manager- Instrumentation

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AMS Suite: Intelligent Device Manager powers PlantWeb through predictive and proactive maintenance of intelligent field devices to improve availability and performance

