

Chemical Plant Achieves Major Savings Through Asset Optimization

RESULTS

- Saved an estimated 200,000 Euros per year
- Prevented three unscheduled plant shutdowns in one year
- Increased production availability to greater than 95%
- Reduced instrument and control valve repair time by more than 50%



APPLICATION

More than 500 HART® and FOUNDATION™ fieldbus instruments and control valves plus more than 200 other instruments, valves, and mechanical/electrical assets are an integral part of highly automated production processes in a four-year-old, state-of-the-art chlorine plant.

CUSTOMER

This major producer of paint, coatings, and specialty chemicals operates plants throughout the world. Automated control systems are widely utilized to minimize operational costs, maximize quality and throughput, and comply with local environmental requirements.

CHALLENGE

The relatively new plant did not have an organized maintenance program beyond the routine preventive maintenance tasks recommended by the original equipment manufacturers. Only a small number of unexpected equipment problems were encountered during the first years of operation. But when the automated control systems began reporting more and more numbers of alarms, the console operators did not know how to respond. The plant needed to develop better maintenance strategies to optimize key production assets in order to achieve increased equipment reliability and process availability.

“A special thanks to the Emerson Process Management services execution team for their effort and dedication during this project.”

Maintenance Manager

SOLUTION

Emerson's Asset Optimization Services team in Europe carried out two effective projects simultaneously. One was to implement the AMS Suite: Intelligent Device Manager predictive maintenance software, which was already installed but not integrated with Emerson's DeltaV™ digital control system nor actively used by plant personnel. This project focused on initiating an optimized maintenance program driven by predictive diagnostics from plant assets.

The assets were prioritized by critically ranking them according to the needs of the process. Then, maintenance planning was required for equipment that was essential for productivity. By using AMS Device Manager to monitor the prioritized devices online, degrading assets are identified well in advance and unexpected failures became a rarity. The field diagnostic information enabled plant personnel to determine what might be going wrong and how long a process can continue to run without risking an unplanned shutdown.

This optimized maintenance strategy enhanced the effectiveness of the workforce by identifying performance risks to critical assets and providing diagnostic and troubleshooting answers. As a result, reliability improvements and production increases can be sustained in the future. In fact, unscheduled shutdowns have been minimized and availability improved to greater than 95 percent. Since production losses of about €50,000 are avoided each time a shutdown is prevented, the plant is saving an estimated €200,000 per year.

The second Asset Optimization Services project was configure AMS Suite to present comprehensive asset health data in an easily accessible and manageable way. With AMS Suite, plant personnel could see Health Index and Criticality ranking, as well as a composite Plant Health figure.

By monitoring plant health at a high level, managers can view when the composite numbers have changed, implying that the health of one of the underlying assets has changed. A one-click filter identifies the cause of the change. One more click displays asset data, including event history, explanation of alerts, and recommended step-by-step instructions.

Plant personnel are currently investigating the inclusion of AMS Machinery Manager for integrated vibration monitoring of rotating assets.

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