

Asset Optimization Services Helps Petrochemical Plant Improve Maintenance Practices

RESULTS

- Established Key Performance Indicators (KPIs) to measure plant performance and asset effectiveness
- Greater than 98% availability achieved by implementing predictive technology
- More than 50% reduction in average monthly alarm rates
- Optimized HART® instrument scanning rates using asset priority ranking



APPLICATION

The acrylonitrile (AN) plant with a capacity of 260 kilotons per annum is one of the most profitable units in an 8-unit complex.

CUSTOMER

The Shanghai SECCO Petrochemical Company Ltd., located Shanghai, China, is a joint venture of the China Petroleum and Chemical Corporation, Sinopec Shanghai Petrochemical Ltd., and BP Chemicals East China Ltd. Inc. Shanghai SECCO Petrochemical Company Ltd. aims to be an internationally competitive enterprise, manufacturing and marketing high quality petrochemical products.

CHALLENGE

Several forced outages following startup of the acrylonitrile plant were a major cause for concern. Reactive maintenance was consuming half of the maintenance man-hours, leaving too little time for preventive maintenance. There was no meaningful critical ranking of production assets and no ongoing analysis of failure probabilities. As a result, turnaround maintenance had to be performed every 18 months, increasing costs and cutting down on productivity. Emerson's AMS Suite asset management software was in place in the relatively new plant, but it was not optimized or used to implement a predictive maintenance strategy.

“Number of alarms reduced from an average of 200 per month in 2008 to 75 in 2011”

Ye Yingmin,
SECCO Shanghai

AMS
Suite

For more information:
www.assetweb.com


EMERSON
Process Management

SOLUTION

Emerson's Asset Optimization Services group was commissioned to conduct a site audit to identify key areas where improvement could dramatically impact the maintenance challenges. This study included an assessment of the process technology and the current level of automation as well as a benchmark gap analysis designed to reveal areas of improvement. Recommended actions were to optimize the existing AMS Suite software, adopt a predictive maintenance strategy to cut reactive maintenance to just 10 percent, and improve internal communication of maintenance information.

Asset Optimization Services experts implemented AMS Suite to enable an optimized maintenance program driven by diagnostics accessed from 1000 key field instruments and valves. These assets were prioritized by a critical ranking according to the needs of the process. The priority assigned to each asset determines the scope and timing of maintenance provided, whether predictive or preventive. Field-generated diagnostics are easily obtained using AMS Suite, so degraded assets can be identified well in advance. Plant personnel use information from all available sources to determine which assets might be failing and estimate how long the process can continue to run without risking an unplanned shutdown. Cost-effective corrective measures can then be implemented.

Asset Optimization Services experts also consolidated diagnostic information from many sources onto a single AMS Suite platform, so the condition of all essential assets can easily be communicated via the Internet. In this way, the current health of critical assets can be viewed by any authorized person in the plant.

The optimized maintenance strategy enhances maintenance effectiveness by promoting a clear understanding of critical asset health and how to apply this knowledge to protect the plant long term. As a result, reliability improvements and production increases can be sustained. In fact, unscheduled shutdowns have been minimized and availability improved to greater than 98 percent.



“Average daily availability increased from 97.5% in 2008 to 98.92% in 2011.”

**Ye Yingmin,
SECCO Shanghai**

**Emerson Process Management
Asset Optimization**
12001 Technology Drive
Eden Prairie, MN 55344 USA
T 1(952) 828-3633
F 1(952) 828-3006
www.assetweb.com

©2011, Emerson Process Management.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available on request. We reserve the right to modify or improve the designs or specifications of our products at any time without notice.

All rights reserved. AMS and PlantWeb are marks of one of the Emerson Process Management group of companies. The Emerson logo is a trademark and service mark of Emerson Electric Company. All other marks are the property of their respective owners.