

# Asset Data Drives Successful Predictive Maintenance Program at Braskem S.A.

## RESULTS

- Saved \$297,500 US per year by identifying and repairing just one leaking valve
- Avoided revenue loss of more than \$6 million US by preventing an emergency shutdown due to a faulty pump bearing
- Reduced valve oscillation and improved response time by loop tuning with AMS ValveLink™ SNAP-ON™ application
- Improved the performance of all key assets through predictive maintenance



## APPLICATION

Plant-wide asset management program provides access to predictive diagnostic information from mechanical equipment, electrical assets, process equipment, instruments, and valves.

## CUSTOMER

Braskem is the largest manufacturer of thermoplastic resins in the Americas. With 35 industrial plants in Brazil, the United States and Germany, the company produces more than 16 million tons of thermoplastic resins and other petrochemical products annually.

## CHALLENGE

The challenge at Braskem was to implement a system capable of detecting potential equipment problems and informing staff members so they could make fact-based maintenance decisions. While valuable diagnostic data is available from a variety of production assets, effective asset management requires the integration of data from a broad range of sources into a common application, where the information is readily accessible and easy to use.

***“Using AMS Suite and CSI technologies to identify developing problems with key production assets can be worth literally millions of dollars to any company.”***

**Alexandre Augusto da Silva,**  
Braskem S.A.

**AMS**  
Suite

For more information:  
[www.assetweb.com](http://www.assetweb.com)

  
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Process Management

### SOLUTION

Braskem's plant in Paulinia-SP Brazil implemented a plant-wide asset management program utilizing Emerson's AMS Suite predictive maintenance software. This application enabled the collection of diagnostic information from all HART® and FOUNDATION™ fieldbus devices connected to the distributed control system as well as other production machinery from the instrument shop, control room, or even a remote location. The information most wanted by maintenance technicians is presented on Device Dashboards in a recognizable manner. Additional troubleshooting information can be accessed very easily.

By using this information in making maintenance decisions, managers are able to determine where and when to apply special attention to key assets. The result is more efficient day-to-day maintenance as well as better outage planning. Since its implementation, this program has delivered some major savings. For example prior to a recent plant shutdown, technicians conducted valve signature diagnostic tests on a number of control valves as an aid in outage planning. The test on one pressure control valve on a propylene storage tank clearly showed the valve was about three percent open when it was supposed to be closed. This small opening was allowing about 20 kilograms of pressurized propylene to escape every hour — a loss valued at \$297,500 per year.

This failure condition was found to be the result of a calibration error at commissioning. It was corrected by a valve travel calibration performed through AMS ValveLink™ SNAP-ON™ application. This critical valve now closes securely, and the huge loss has been eliminated.

In another case, Braskem technicians, using the diagnostic capabilities of AMS Suite and a CSI online vibration monitor, found excessive vibration in an axial pump on a loop reactor. In fact, they were able to identify a specific bearing as the cause and recommended shutting down the process as soon as possible. However, the plant needed to stay in production for another 15 days to fulfill a commitment to a customer. If the production system had to be shut down due to an unexpected failure, emergency repairs would have taken five days (instead of two days if planned), costing the company more than \$6 million in lost revenue.

A decision was made to closely monitor the health of the pump. Daily vibration analysis provided assurance that the pump would continue operating safely until the production order was completed. The pump did continue to operate, avoiding a substantial loss and maintaining customer confidence.

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***“This plant experienced a rapid return on its investment in asset management while maintaining high safety standards for both people and equipment.”***

**Alexandre Augusto da Silva,**  
Braskem S.A.