

Middle East Gas Processing Facility Views the Complete Picture with Asset Sentinel

Application Note

Honeywell's solution for managing the performance of critical plant assets has helped transform equipment condition monitoring

Benefits

As the developer of one of the Middle East's largest energy projects, a Middle-East Gas Processor needs world-class reliability. It has therefore always been committed to condition-based maintenance, relying on early detection of faults to stay efficient and keep the pipelines flowing.

Implementing Honeywell's Asset Sentinel however, has transformed the scope, depth and effectiveness of its equipment condition monitoring (ECM). Covering more than one thousand critical assets, Asset Sentinel enables the company's engineers and management to track alarms, compare actual results with expected performance, and assess assets' performance against historical data.

The solution has simplified, streamlined and consolidated the ECM program as well as the resulting maintenance workflows.

"It provides the reliability and process engineers with a single place to view real-time thermodynamic performance alongside process and dynamic measurements for each machine," said a Condition Monitoring Engineer at the facility.

Most importantly, by integrating real time process data with the online and offline condition monitoring the gas processor can identify, define and monitor process parameters that extend assets' lives and result in more reliable operation.

"Process changes have a significant impact on equipment behavior and reliability, which in turn show up in the process data. We can now see how the process parameters affect the asset performance. It is the missing link that Asset Sentinel provides."



Asset Sentinel Monitoring Dashboard

Background

The Middle-Eastern based Gas Processor produces and processes natural gas for customers in the United Arab Emirates and Oman. The project includes offshore oil platforms, onshore gas processing plant as well as subsea pipeline that transports the gas to reception facilities.

Honeywell was originally contracted to provide the automation applications and systems for the project, and its technology features heavily throughout.

Challenges

To ensure reliable operation, limit downtime and extend asset life, the ECM team handling the

operations face monitoring 911 rotary assets, such as pumps, compressors and air compressors, and another 200 static assets – exchangers, boilers and different types of heaters.

The ECM program initially focused on the physical health of the equipment, principally through vibration monitoring, combining online monitoring with some offline analysis. However, few process parameters were recorded. In most cases there was no way to monitor the impact of process conditions on equipment performance or detect declining performance before it was evident in equipment's physical condition.

Solution

Honeywell installed and configured Asset Sentinel to sit at the center of the plant's ECM program.

The solution provides a ready overview of the system's alerts, vibration and bearing monitoring, process values, and equipment performance indicators. Physical condition indicators, actual and expected performance values and process data are gathered from Experion® PKS, control loops, field devices, plant equipment, manual entries and real time database.

The solution also smoothly interfaces with the plant's laboratory information management system and corrosion information management system, as well as the SAP enterprise software

(see diagram) to collect data on the mean time between failure and mean time to repair for rotating equipment.

Since Asset Sentinel is built on open connectivity, it can pull data in from any OPC source.

Providing enterprise-wide information integration, real-time visualization tools and extensive reporting functions, the solution gives managers a broad overview of equipment health and current issues, and a detailed analysis that the ECM team can use to improve performance.

It is now able to track the impact of a range of dynamic process parameters, and link these to data from physical equipment monitoring. The team can see, for example, how the asset performs in different flows or temperatures, and use the information to refine process parameters for operators and, if necessary set new alarm boundaries.

"It gives us early indication of the most critical parameters for particular equipment," said the Condition Monitoring Engineer. In one case, it led the team to identify that two pumps were running in parallel when in fact only one was needed, saving the plant 15MgW a year.

"We have a much better insight into the factors influencing equipment health, Asset Sentinel means we get the whole story."

For More Information

Learn more about how the Honeywell Uniformance® Suite provides the data, analytics and visualization solutions you need to turn plant data into actionable information. Visit www.uniformance.com.

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