Refinery Reduces Risk of Unscheduled Downtime with Continuous Wireless Corrosion Monitoring System

Results

- Reduced risk of unscheduled downtime through corrosion monitoring of process equipment and pipelines
- Decreased direct and indirect operating costs for maintenance and repair
- Optimized maintenance unit program with an emphasis on maintaining critical system assets in working condition during repair period

Sensors installed at the process piping where sulfur compounds change significantly are helping to monitor the wall thickness of process equipment and pipelines and protect the process equipment from corrosion.

Application

Process equipment and pipeline corrosion monitoring on a vacuum distillation unit with highly changeable feedstock.

Customer

A mid-size European refinery.

Challenge

Due to the regularly changing feedstock causing unknown corrosion impact on the unit, there was an increased potential for unplanned shutdowns. Recent increases to the runtime between planned shutdown increased the risk of corrosion causing an incident.

Solution

The refinery selected Emerson's Rosemount™ Wireless Permasense ultrasonic sensors to continuously monitor the wall thickness of equipment and pipelines, which supports the refiner's wider digital transformation strategy by monitoring the condition of the unit in real time.

Installation of the non-intrusive battery-powered sensors was carried out without shutting down or modifying the pipeline, enabling quick and easy commissioning. The sensitivity of the sensors means that corrosion can be realized immediately, allowing mitigating action to be performed to control the corrosion. The refiner's goal was to reach an extended turnaround schedule, so maintaining asset integrity was key.

Non-intrusive Rosemount Wireless Permasense WT210 systems use unique sensor technology and wireless data delivery to continuously monitor for metal loss from corrosion or erosion.

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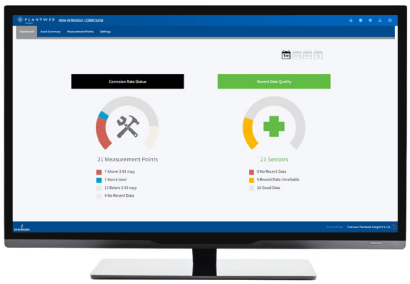
A direct and highly accurate wall thickness measurement informs on the absolute state, whilst calculated corrosion rates look at the historical performance. High measurement accuracy and repeatability allows the refinery to track changes in the thickness of metal of the order of 10 microns, which is significantly more sensitive than comparable measurement techniques. The standard 12-hour period between measurements allows for quick identification and compensation of episodes of corrosion activity.

All data is accumulated, processed, and stored on the server, which is then accessible on any number of workstations connected to the network. The reliable, accurate wall thickness data delivered via a *Wireless*HART® network from the Rosemount Wireless Permasense sensors to the accompanying Plantweb Insight™ software can help the refinery make better decisions regarding pipe maintenance and replacement.



Emerson's corrosion monitoring system ensures that data is securely stored in the database and can be viewed via the Plantweb Insight Non-intrusive Corrosion Application from any computer on the same network.

Resources

Emerson Automation Solutions Industries
Emerson.com/Refining

Rosemount Wireless Permasense Corrosion & Erosion Monitoring
Emerson.com/RosemountCorrosion

Rosemount Wireless Permasense WT210
Emerson.com/RosemountWT210

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