Emerson's Smart Wireless Technology Saves Plant € €160,000 Euros in Downtime and Maintenance

RESULTS

- Prevented production losses of €150,000 Euros
- Reduced need to replace pumps every six months at a cost of €10,000 Euros

The first use of WirelessHART devices has virtually eliminated downtime in this process and improved the efficiency of the gas-cleaning tower.

APPLICATION

Gas-cleaning tower with a feedwater inlet/outlet system.

CUSTOMER

Chemical plant in Europe.

The plant produces titanium dioxide to enhance the whiteness, brightness, opacity, and durability of paints, coatings, plastics, and other consumer products.

CHALLENGE

Plant personnel operated the gas cleaning tower with an overfill drain that only dumped when the vessel became full of water and sand settled to the bottom. The water would be displaced, lose proper dilution, and cleaning efficiency would drop, allowing unknown levels of hydrochloric acid to be released to the atmosphere. The sand buildup would also erode ceramic components of the circulating pump, causing internal leaks and complete failure. Bi-weekly maintenance to clean the vessel provided minimal improvement to cleaning efficiency. And, the team still had to replace the circulating pump every six months to prevent a plant shutdown. Process shut down for one day for pump replacement is estimated at a production loss of €150,000 Euros ($194,000 USD) and €10,000 Euros ($12,886 USD) for pump replacement.

Emerson engineers learned about the gas-cleaning tower challenge and recommended the installation of a new drain valve wirelessly controlled using a Smart Wireless solution powered by WirelessHART™ technology.

SOLUTION

The application required the installation of a new drain valve at the bottom of the cleaning vessel so that water and sand could be automated to flush on an as-needed basis. To determine when the vessel was full and ready to be drained, a Rosemount® 2160 Wireless Vibrating Fork Liquid Level Switch detected when water levels reached overfill conditions. The DeltaV™ control system would then send

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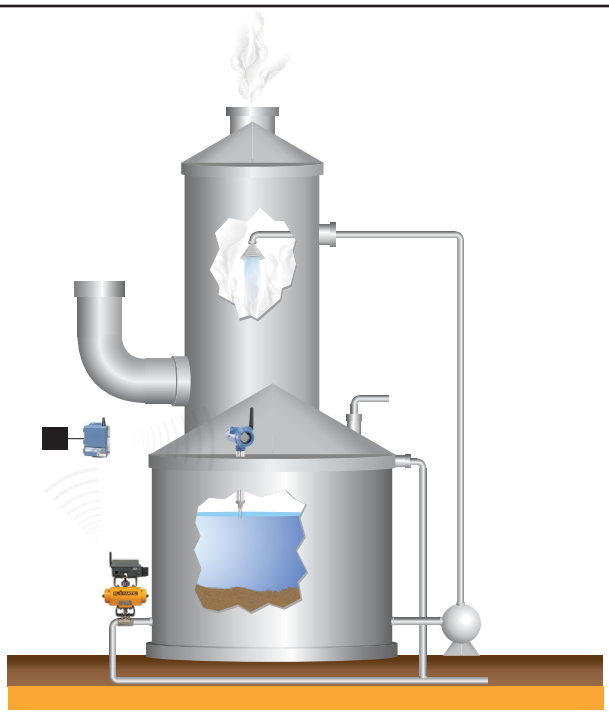
a wireless “open” command to the Fisher® 4320 Wireless Position Monitor with On/Off Output Control Option to open the turn drain valve. After 30 seconds, the DeltaV control system would send the “close” command to complete the draining cycle.

RESULT

Implemented in December 2011, the project has proven to be a positive change for the plant. The first use of WirelessHART devices has virtually eliminated downtime in this process and improved the efficiency of the gas-cleaning tower. They expect to gain two full days of production per year and avoid the cost of pump replacements. The improved performance of the cleaning tower also means the plant is in compliance with local environmental regulation and is preventing fines and negative publicity.

The plant still cleans the vessel periodically, but noticed much less sand in the cleaning vessel, meaning maintenance workers spend less time in a confined space exposed to chemicals. Worker safety and working conditions have been improved with the wireless solution.



The Fisher 4320 Wireless Position Monitor with On/Off Control Output and Rosemount 2160 Wireless Vibrating Fork Liquid Level Switch were integrated into the DeltaV control logic to provide traditional automation efficiency, but without the traditional cost of engineering and installation of wired instruments and final control elements.

Click or scan the QR code for information on the Fisher 4320 Wireless Position Monitor with On/Off Control Output

Click or scan the QR code for information on the Rosemount2160 Wireless Vibrating Fork Liquid Level Switch

Click or scan the QR code for information on the DeltaV Control System

http://www.Facebook.com/FisherValves

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