

Univar enhances operations with new level system



chemical

SIEMENS

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Challenge

Univar is a world leader in industrial chemical distribution with a network of 163 distribution hubs in North America and Europe. The company processes, blends and repacks bulk chemicals for specific customer needs. Based in the Netherlands, Univar has 7,000 employees, and had 2005 sales of US\$6 billion.

In the UK, the depot at Wellingborough supplies customers in all industry sectors throughout the UK. The site has 17 vertical, cylindrical tanks storing a range of chemicals. With the rising value of chemicals and the more stringent environment regulations, accurate level measurement is critical for stock control and protection against tank overfills.

Since it was commissioned in 1988, process equipment such as the hydrostatic level system had become obsolete and needed replacing. The hydrostatic transmitters, inserted at the bottom of the tanks, were difficult to install and had to be removed for regular calibration. In direct contact with corrosive chemicals, they needed frequent cleaning and replacement. Each time, this required emptying the tank, causing downtime of up to two days.

Solution

A local engineering firm, Stratos Instruments, assessed the tank monitoring systems, engineered a solution and selected instruments from Siemens to suit the application. In November 2005, they replaced each hydrostatic device with a SITRANS LR 200 radar transmitter on each of seven plastic tanks holding acids. Tanks

that already had ultrasonic or radar instruments were not changed. Each new radar instrument was installed in a nozzle on the top of the tank but outside the tank wall. The microwaves pass through the tank roof and are never directly exposed to the chemical contents. This innovative installation required no drilling, and instruments can be removed without emptying the tank. The radar instruments are connected to the PROFIBUS communications network and allow for continuous level monitoring.

In addition, all tanks except the water tank were equipped with a Pointek® CLS 100 capacitance high level switch as a failsafe against spills. These are also installed externally. Each one sits in a plastic pocket outside the tank wall.

All the instruments are wired into a Siemens S7-300 PLC with a Siemens HMI (human-machine interface). The high point level system is designed to sound an alarm if the tank reaches a set point, and the graphic display provides visual cues to indicate if the tanks are full, empty or at normal levels.

Operators find the system easy to use. Any engineering parameters that require changing can be done through a laptop or the HMI.

Benefits

Because of the aggressive chemicals, non-contacting radar proved the right technology choice for these applications.

"We feel very confident in the system," said Jez Hill, Regional Engineering Manager with Univar. "The non-contacting approach cuts the maintenance, which saves us a lot of staff hours and downtime.

The level readings are accurate and reliable, and that improves our stock control. The high point alarm system enhances safety. We are very happy with these instruments and the support from Siemens."



A Siemens SITRANS LR 200 radar transmitter mounted on the top of the tank provides continuous level measurement, while a Pointek CLS 100 capacitance switch provides a high level failsafe. Both instruments are installed outside the tank wall.



The Siemens HMI provides the status of each tank with visual cues indicating level.