



APPLICATION SPOTLIGHT

Level Monitoring - Hazardous Chemicals in Rail Cars



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APPLICATION:

On a daily basis, a refinery ships several rail cars loaded with sulphuric acid to a load regeneration facility. The customer would send a technician out to the site to manually measure the levels of each rail car loaded with acid using a tank measurement stick. As using a stick required measuring the tank multiple times, technicians were exposed to acid fumes on numerous events on a daily basis. The procedure was also time-consuming and laborious, requiring operators to return to tanks several times during the day to conduct the measurements.

PRODUCT SUPPLIED:

- SignalFire Gateway Stick
- SignalFire Sentinel Wireless Nodes
- SignalFire Toolkit - software to interface with the equipment from the office

CHALLENGE:

As a manual method, the tank measurement stick varied in accuracy dependent upon the operator. Technicians were exposed to acid fumes multiple times during the day, posing a risk to their safety and health.

SOLUTION:

Reducing the risk of exposure by technicians to the sulphuric acid, a radar tank sensor now measures the level of the sulphuric acid in rail cars. Instead of having to verify tank levels approximately 8 to 10 times during an eight-hour shift, an operator only needs to place the radar sensor inside the tank when first opened and then remove the sensor when the tank is full of spent acid.

A SignalFire Class 1 Division 1 Sentinel HART node, integrated with the sensor, sends data to a Gateway through a mesh network where it becomes available in standard Modbus format for download into a computer. The hazardous location node also powers the sensor, making the level monitoring system completely wireless. As a completely wireless system, the SignalFire remote monitoring system eliminates the need to run conduit as required by a wired system.

