Case Study: Hydrogen Sulfide and Methane Detection in Refining

Industry
REFINING

VANGUARD WirelessHART
FIXED POINT GAS DETECTOR

CHALLENGE:

A North American refinery needed a more efficient way to detect hazardous gases—specifically hydrogen sulfide (H_2S) and methane (CH_4)—within its analyzer buildings. These buildings house sensitive equipment that samples process media flowing through the refinery's pipe network. To prevent accidents, refinery workers rely on personal gas monitors while inside the analyzer buildings. However, the customer sought a proactive safety solution: fixed-point gas detectors to alert workers of gas presence before entering these confined spaces.

The complication? Installing traditional wired gas detection systems was impractical and costly. The analyzer buildings are remote from the control center, making it expensive to run conduit and cabling for new detection points.

SOLUTION:

Instead of opting for wired detectors, the refinery installed Vanguard WirelessHART-enabled gas detectors, creating immediate, cost-effective monitoring points, taking advantage of the existing WirelessHART® network, with a gateway just 100 feet from the analyzer building.

Within a day, the Vanguard devices integrated seamlessly into the existing WirelessHART mesh network, delivering real-time data on H_2S and CH_4 levels back to the control center. This allowed operators to remotely assess hazardous gas concentrations before entering the building.

Wireless deployment also enabled strategic detector placement. Without wiring limitations, the Vanguards were mounted close to pipe flanges—areas most prone to leaks—maximizing detection effectiveness.

CH_4 Monitoring

H_2SMonitoring

Leveraged an existing WiHART network

Cost and time savings from not running conduit

Fast Deployment: day instead of weeks