

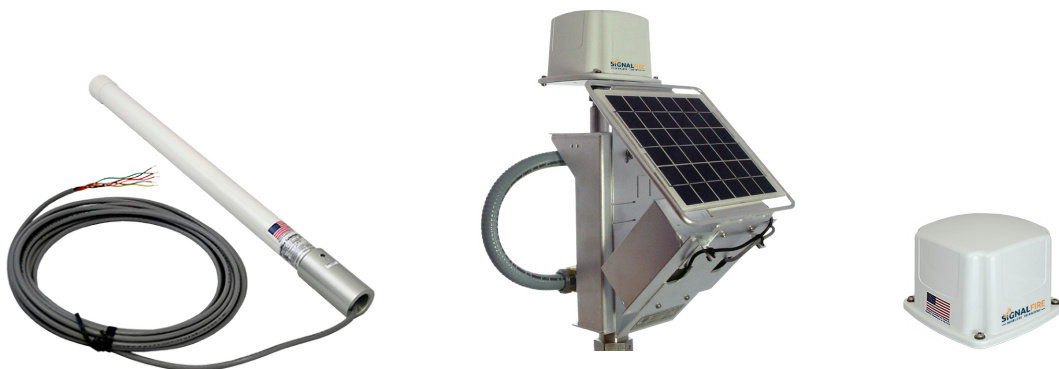


APPLICATION SPOTLIGHT

Remote Sensing System with Solar-Powered Repeater
Automates Liquid Storage Tank Level Monitoring



Remote Sensing System with Solar-Powered Repeater Automates Liquid Storage Tank Level Monitoring



APPLICATION:

Manually monitoring six liquid tanks proved challenging for a tank farm with a terminal that operated 24 hours per day. To reduce costs, manual errors and labor, the tank farm installed a wireless sensor control system that automated tank level management by transmitting sensor information to a central control room.

PRODUCT SUPPLIED:

- Gateway Stick
- Sentinel HART Nodes
- Class 1 Division 1 Intrinsically Safe Solar Power System

CHALLENGE:

The tank farm operation wanted a highly reliable sensor control system that would not drop signals when transmitting information from sensors located on the tanks. In addition, a reliable power source was needed to support the 24/7 terminal operations.

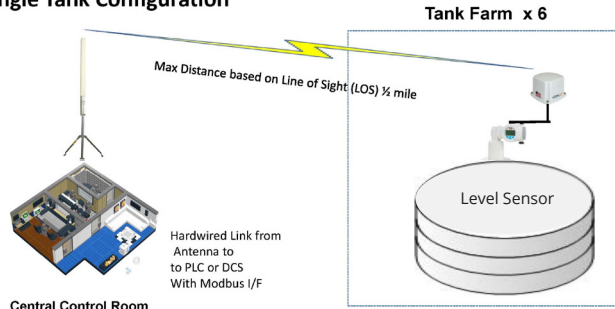
SOLUTION:

A SignalFire Remote Sensing System consisting of five battery-powered Sentinel HART nodes and a stick-mounted Gateway offered a cost-effective solution in creating a strong sensor network as part of a remote tank leveling application. The battery-powered Sentinel HART nodes power the level sensors installed on the tops of tanks without the need for line power. The data is then transmitted to the Gateway, which is tied into a PLC or DCS via a Modbus interface. Installation is easy as nodes automatically configure within a SignalFire mesh network.

To reserve battery power, Sentinels are configured to a fixed transmission cycle and sleep mode. To reinforce and create a stronger network, a solar-powered Sentinel was centrally located in the tank layout to provide the network with a level of redundancy. If a battery-powered system ever operated on low power and could not reach the control room, the solar-powered system would serve as a repeater.

The battery-powered Sentinel nodes along with the ease of adding tanks and quickly configuring them into the network were key factors in the selection of the SignalFire Remote Sensing Systems.

Single Tank Configuration



Shown is a single tank configuration outlining how the Sentinel node interfaces with the level sensor in transmitting data to a Gateway that ties into a PLC within a central control room. All transmission distances are based on good line of sight.