Emerson's Smart Wireless Solution Monitors Remote Reaction Tank at Nu-West Industries

BENEFITS

- Smart Wireless network provides accurate minute-by-minute readings from 16 measurement points on a reaction tank located about 250 feet from the central control room
- A wired solution would have been very challenging due to the remote location
- Smart Wireless provided a low-risk and simple solution
- The self-organizing architecture does not require line-of-sight

CHALLENGE

Nu-West Industries phosphate-based fertilizer plant in Soda Springs, Idaho wanted a reliable way to monitor pressures and temperatures at a remote location. The self-organizing Smart Wireless system provides accurate minute-by-minute readings from 16 measurement points on a reaction tank located about 250 feet from the central control room. The remote tank is 40 feet high and has four different beds of gases used to react with certain process chemicals. Even though this is not classified as a hazardous area, the tank layout and distance involved made running wires to the tank and mounting instruments both difficult and expensive.

SOLUTION

Emerson's Smart Wireless technology was selected by Nu-West, a subsidiary of Agrium US, because it proved to be the easiest to install, most secure, and most reliable solution to the problem of retrieving essential operating information at an extended distance. Transmissions from the remote tank at Nu-West are received by a Smart Wireless Gateway and channeled via the PlantWeb® control architecture to the DeltaV™ automation system where the AMS® Suite: Intelligent Device Manager software recognizes readings that are out of the norm, enabling operators to take action to control the reactions in the tank.

"Hard wiring this installation would have been very challenging due to the location of the vessel. Given the low-risk and simplicity of the application, this seemed an ideal place to try Emerson's wireless package. The self-organizing architecture was the clincher since less than perfect line-of-sight to each device is not a concern with this system. We already have plans to add more devices to the network."

Brian Wood
DCS Specialist, Nu-West Plant

For more information:
www.EmersonProcess.com/SmartWireless

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RESULTS

The self-organizing Smart Wireless system provides accurate minute-by-minute readings from 16 measurement points on a reaction tank located about 250 feet from the central control room.

Each wireless device in a self-organizing network can act as a router for other nearby devices, passing messages along until they reach their destination. If there is an obstruction, transmissions are simply re-routed along the mesh network until a clear path to the Smart Wireless Gateway is found. As conditions change or new obstacles are encountered in a plant, such as temporary scaffolding, new equipment, or a parked construction trailer, these wireless networks simply reorganize and find a way.

All of this happens automatically, without any involvement by the user, providing redundant communication paths and better reliability than direct, line-of-sight communications between individual devices and their gateway. This self-organizing technology optimizes data reliability while minimizing power consumption. It also reduces the effort and infrastructure necessary to set up a successful wireless network.

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