

Emerson's Smart Wireless Instruments Monitor Tanks and Are Easily Moved for Multiple Applications at Technochem

BENEFITS

- Wireless solution enables more accurate real-time data for process efficiency, documentation, and access to the data via the company network
- Wireless transmitters are easily moved as needed to aid in facility's processing, troubleshooting, and new process development



CHALLENGE

Technochem Environmental Complex Pte Ltd (TEC) in Singapore provides treatment, incineration, and distillation services for chemical wastes generated by pharmaceutical and petrochemical companies. TEC needed an accurate tank level measurement system along with an automated method of moving that data into a computer database. In addition to tracking and managing inventories, documentation was necessary to schedule incoming customer delivery and give status of their orders, including assurance that their chemical wastes had been treated and destroyed. Wired devices were considered initially, but the high cost of wiring, even in this relatively small complex, was a drawback. When the new wireless technology was introduced to Technochem management, they were impressed by the ease of installation, the speed with which transmitters could be up and communicating from essentially any spot in the complex, the reliability of the self-organizing network, and the inherent flexibility and mobility of the wireless sensors.

SOLUTION

Emerson Process Management's Smart Wireless field network is automating inventory management by monitoring levels in fourteen tanks at TEC. In addition to delivering continuous level measurements from storage and process tanks, some of the fourteen Rosemount® wireless pressure transmitters are moved from place to place to aid in troubleshooting and new process development in TEC's continuous improvement culture. Because the wireless instruments are not fixed in position by wiring, they can be reinstalled in a matter of minutes.

"If I see a problem in some part of our process, it is fairly simple for me to take a pressure transmitter and move it elsewhere. I can often determine what's going on in just five minutes, address the issue and quickly return the transmitter to its original application."

Jan Huijben
Incineration Manager

RESULTS

The benefits have been apparent since the April 2008 installation of wireless pressure transmitters to report on tank levels, including elimination of “clipboard rounds,” more accurate real-time data for process efficiency, documentation to verify that specific chemical wastes have been destroyed, and access to the data via the company network. When management personnel are at another site, they can view the process data and order changes if necessary. Electronic connection of select data for customers is being developed.

The self-organizing nature of the Smart Wireless network is especially effective in delivering reliability and flexibility at TEC. With this technology, each wireless device in the 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 wireless sensors are moved 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 to deliver their messages.

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.

“The flexibility of Emerson’s self-organizing wireless technology makes it much easier to troubleshoot problems as well as evaluate new applications.”

Jan Huijben
Incineration Manager

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