

Emerson's Smart Wireless Network Improves Monitoring of Power Plants for Most Efficient Energy Production

BENEFITS

- Ease of use and reliability led to the decision to choose Emerson Smart Wireless
- Smart Wireless enables easy establishment of a temporary wireless network, enabling increased productivity and plant coverage by 10 percent
- Gained efficiency led to an annual revenue increase of \$512,000 and improved revenue by pushing higher output for each plant while reducing costs



CHALLENGE

The Testing Laboratory of Equipment and Materials (LAPEM) of Mexico's Federal Electrical Commission (CFE) has five analysis teams that set up temporary measurement facilities at each of 140 power plants throughout Mexico to determine thermal efficiencies. They were interested in wireless technology that would be easier and quicker to install so they could reduce turnaround time at each plant in order to reach every plant on a two-year cycle.

SOLUTION

When a group of technicians and engineers arrive at a plant, they install 7 to 25 Rosemount® wireless instruments, depending on the size of the unit (350MW, 300MW, 160MW and smaller), plus a Smart Wireless Gateway to receive key flow, pressure, and temperature measurements which are fed to a thermal efficiency model. The model is used to determine the heat rate of the unit and the efficiency of such equipment as condensers, cooling towers, boilers, turbines, and auxiliary equipment as well as energy losses. This information helps the analytical team define problems a plant needs to correct to maximize production efficiency.

“In the past, we could only cover about 50 plants per year. We needed to reduce turnaround time at each plant in order to reach every plant on a two-year cycle. Emerson's Smart Wireless made it possible for the team equipped with wireless devices to cut their on-site time by one-third, enabling them to complete more services in a year's time and proving the value of wireless.”

Oscar Martinez Mejia
LAPEM

RESULTS

In contrast to traditional wired measurements, one team's easy establishment of a temporary wireless network in power plants made it possible to increase its productivity and plant coverage by 10 percent. This led to an annual revenue increase of \$512,000 US for LAPEM. It has also improved the revenue of the Federal Electrical Commission by pushing higher output for each plant while reducing costs. The ease of use and the reliable performance of Emerson's Smart Wireless system resulted in a decision by the Laboratory Analysis group to equip all five of its analytical teams with wireless instrumentation. Their productivity is expected to increase by another 40 percent with faster turnaround time between services. As a result, all five teams should perform 25 more assessment services per year, producing an extra \$1,375,000 US annually without adding personnel. Each of the 140 power units can now be visited and analyzed every other year.



CFE LAPEM uses Smart Wireless transmitters for temporary measurement.

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