

IT'S NEVER BEEN DONE BEFORE

PEMEX Improves Safety and Extends Production of Oil Field With Emerson Technology

PEMEX wanted an innovative and economically viable solution to extend oil production from 30-year-old offshore platforms in its Cantarell field in the Gulf of Mexico. To achieve its vision of an “intelligent field,” PEMEX turned to Emerson to create a remote monitoring system that can be cost effectively and quickly installed to better manage the field, increase worker safety and improve environmental protection.

How does an oil company efficiently operate declining oil wells on offshore platforms built decades ago in an area prone to seasonal hurricanes? This is the challenge facing Petróleos Mexicanos (PEMEX), the state-owned energy company in Mexico, as it seeks to extend the life of its Cantarell oil field located in Campeche Bay in the Gulf of Mexico.

The Cantarell field is one of the largest oil fields in the world, and as recently as 2003, was contributing 60 percent of Mexico’s crude oil production. However, the Cantarell field has been in a production decline since then, currently accounting for about 30 percent of Mexico’s crude oil output.

PEMEX’s Cantarell operations consist of about 200 production wells on more than 50 platforms, which have limited or non-existent power availability. In addition, many of the platforms lacked a communications infrastructure to transmit data back to the onshore operations facility. As a result, PEMEX was sending employees by boat each day to the platforms located 80 kilometers (50 miles) from shore to manually gather data to make production decisions. This approach was costly, subject to unfavorable weather conditions, delayed important decision-making, and created safety risks for workers.

After 30 years of uninterrupted production, PEMEX needed to find an innovative and economically viable monitoring solution to optimize the current production cycle of the Cantarell field. PEMEX wanted a technology approach that could collect timely and reliable information on field performance and its production processes – and integrate that data for all the offshore platforms to enable better management of the field, increase worker safety and improve environmental protection.

It’s Never Been Done Before. To achieve its vision of an “intelligent field,” PEMEX engineers in Ciudad del Carmen, worked with Emerson México local engineers to create a remote monitoring system for its offshore platforms that would help extend the life of the Cantarell field without additional infrastructure, long implementation periods or high maintenance costs.

After an extensive review of competing solutions and conducting a number of field tests, PEMEX selected Emerson Smart Wireless technology because it is cost-effective, quick and easy to implement, solves the limited power consumption issues and meets stringent requirements for reliability and communications integrity.

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With Emerson Smart Wireless, PEMEX can achieve, virtually overnight, better visibility of its production processes and field performance by adding monitoring points throughout its offshore facilities at a fraction of the cost of wired instrumentation. Battery-powered Smart Wireless sensors and instrumentation can immediately obtain pressure, temperature and valve position; providing operators with real-time information they need to react quickly to any change in the condition of the well. The ability to monitor rigs, emergency shut-down valves, even in adverse sea or weather conditions, allows PEMEX to protect the integrity of its platforms and better manage the field. The next step in PEMEX's "intelligent field" implementation is to integrate the monitoring data from the satellite platforms to its Operations Center in Ciudad del Carmen, which will provide a deeper visibility of its production processes and enhance operational decision making.

When the project is completed, PEMEX anticipates considerable annual savings in logistics and installation, better field production optimization and improved worker and environmental safety through a reduced need for offshore platform trips. These steps will extend the life and contribution of the Cantarell field. Like other companies around the world, PEMEX is finding out Emerson Smart Wireless technology is the right solution for its business.

PEMEX is the third crude oil producer worldwide and it's evaluated as the 11th integrated company. In 2008, PEMEX had annual sales of US\$98 billion. Emerson has more than 40 years presence in Mexico with multiple manufacturing facilities across the country, which makes it one of the most important employers in Mexico's manufacturing sector.