

Emerson's SmartProcess™ Oil and Gas Application Suite and Wireless Solutions Provide Faster Wellpad Automation

RESULTS

- Reduced commissioning time
- Eliminated need to bury cables
- Lowered total installed cost
- Simplified support network from single solution provider
- Unified system for well control, site control and LACT operations



APPLICATION

Onshore oil and gas producer in greenfield needed well control, site monitoring, shutdown and automated liquids custody transfer into pipeline

CUSTOMER

Top 5 producer in the SCOOP shale play in South-Central Oklahoma

CHALLENGE

With an aggressive drilling schedule in an emerging play, the operator needed to control wells with a variety of lifting methods (free-flowing, plunger, gas-lift, rod pump), monitor facilities, automated and manual site shutdown and perform all necessary measurement and control for automated liquid custody transfer into pipelines.

Minimizing installation time was a primary concern and the operator relied on a variety of third-party contractors to perform equipment installations. This meant that new technology not yet in widespread use would make meeting deadlines more difficult as contractors would still have to learn how to utilize them.

“The ease of use with these applications and integrated wireless interface significantly lowered installation and commissioning time.”

CHALLENGE *(cont'd.)*

The customer was initially brand agnostic, preferring whichever solutions met their needs best from both technical and pricing standpoints. There was no specific desire to use the same provider for well control, instrumentation and LACT systems.

SOLUTION

The ROC800-Series platform was chosen as a foundation to the system based on the ease with which it's configured to perform a variety of tasks. By utilizing a variety of programs from Emerson's SmartProcess™ Oil & Gas Application Suite, the operator was able to reduce the technical expertise required for trouble-free installation and startup. The Well Optimization Manager allowed for optimization of production from a well regardless of lift type. Surface Control Manager was used to perform site shutdowns based on high tank levels or other triggers. Tank Manager was used for liquid asset tracking based on tank level.

Integrating the ROC800 Controller with a WirelessHart™ IEC 62591 Interface and Rosemount™ Wireless Transmitters provided wellhead casing, tubing pressure, oil and interface levels in tanks, and temperature of the production separators. Since the system is plug-and-play, no specialized knowledge in Modbus or other communication protocols was required of the installation contractors. By eliminating the need to trench and bury cables or lay conduit, the slightly greater cost of the wireless transmitters was more than offset. In fact, in a head-to-head comparison against wired solutions, the Rosemount WirelessHART system offered the lowest total installed cost. The system was tried in the field against wireless solutions from competitors, and was found to provide greater reliability and ease of use. The customer also found great value in Emerson's superior support at a system level.

The ROC800-Series chosen for the project was the ROC827L Controller, which allows for API-compliant liquid measurement for the LACT unit. The Tank Manager and Surface Control applications allowed for complete LACT control from the ROC, minimizing any additional expenses. Liquid transfer is automatically triggered once tank levels reached a determined capacity, but can also be started by an operator using the 7-inch color touchscreen. Many installations involved two wells producing into non-commingled tanks, although the LACT only had a single run. All run switching required for proper transfer and divert flow were switched automatically from the ROC827L Controller.

Ultimately, the operator chose a system which offered quicker installation time by using wireless instruments which are easily integrated into a controller, simpler to operate by using a single platform for all the on-site automation and required less capital expense in installation and hardware costs than wired, nonintegrated systems.

Global Headquarters

North America and Latin America

Emerson Automation Solutions
Remote Automation Solutions
6005 Rogerdale Road
Houston, TX, USA 77072
T +1 281 879 2699
F +1 281 988 4445

Europe

Emerson Automation Solutions
Remote Automation Solutions
Unit 1, Waterfront Business Park
Dudley Road, Brierley Hill
Dudley, UK DY5 1LX
T +44 1384 487200
F +44 1384 487258

Middle East and Africa

Emerson Automation Solutions
Remote Automation Solutions
Emerson FZE
PO Box 17033
Jebel Ali Free Zone - South 2
Dubai, UAE
T +971 4 8118100
F +971 4 8865465

Asia Pacific

Emerson Automation Solutions
Remote Automation Solutions
3A International Business Park
#11-10/18, Icon@IBP, Tower B
Singapore 609935
T +65 6777 8211
F +65 6777 0947

www.Emerson.com/RemoteAutomation



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