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 operationst

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 technology not yet in widespread use would make meeting deadlines more difficult as contractors learned the required skills.

The customer was initially brand agnostic, preferring whichever solutions met their needs best from both technical and pricing standpoints. There was not a specific desire to use the same provider for well control, instrumentation, and LACT systems.

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

Remote Automation Solutions

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Process Management

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 a trouble-free installation and startup. The Well Optimization Manager allows for optimization of production from a well regardless of lift type. Surface Control Manager is used to perform site shutdowns based on high tank levels or other triggers. Tank Manager is used for liquid asset tracking based on tank level.

Integrating the ROC800 with a *Wireless*Hart® 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 *Wireless*HART 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, which allows for API-compliant liquid measurement for the LACT unit. Utilizing the Tank Manager and Surface Control applications allowed for complete LACT control from the ROC, minimizing additional expense. Liquid transfer is triggered automatically once tank levels reach a determined capacity, but can also be started by an operator using the 7-inch color touchscreen. Many installations involve two wells producing into non-commingled tanks, although the LACT only has a single run. All run switching required for proper transfer and divert flow is switched automatically from the ROC.

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, non-integrated systems.

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