

Emerson's Smart Wireless Products – Using Open IEC 62591 (*WirelessHART*[®]) Standard – Significantly Improve Production at StatoilHydro Gullfaks Offshore Platforms

BENEFITS

- Automated solution provides flow measurements every 30 seconds
- Early detection of loss of flow now possible
- Improved throughput and over time significant increases in production
- Number of manual measurements in hazardous areas reduced



CHALLENGE

StatoilHydro was occasionally losing flow from the producing wells at its Gullfaks A, B and C platforms, caused by a loss of wellhead pressure. No flow-metering devices are installed so temperature readings are used to detect loss of flow. Typical well fluid is 60° C so the pipe feels warm, but should flow be interrupted the pipe drops back to the ambient temperature. However, the manual readings taken by an operator placing a hand on a pipe were only collected at the start and end of a shift, so flow interruption could easily go undetected for long periods and production would be lost. An automated solution was required but the wellhead was already a very crowded area and for safety reasons the introduction of additional equipment such as new cabling, cable trays and junction boxes was not possible. Wireless presented an obvious solution but with metal pipe work, walkways above and below, and many other metal obstructions, a line of sight wireless solution could not offer the reliability of connection required.

“Emerson’s wireless transmitters have enabled the quick and reliable detection of lost flow, and the immediate action taken to re-establish flow has increased production significantly.”

Tormod Jensen
Staff Engineer, Plant Integrity, Gullfaks Field,
StatoilHydro Norway

SOLUTION

StatoilHydro initially implemented a pilot installation of Emerson's Smart Wireless technology on the Gullfaks A, B & C platforms. Rosemount® 648 wireless temperature transmitters were installed, providing an indication of flow at forty wells. The wireless devices are used to transmit data from clamp-on temperature sensors mounted on the surface of the flow pipes. In contrast with the once-a-shift manual recordings, Emerson's Smart Wireless devices now transmit readings back to the existing control system every 30 seconds providing operators with the real time information they need to react quickly to any change in flow.

Despite the difficult working environment and the lack of line of sight between the transmitters and the gateway, there were no connection problems. The 'plug and play' nature of Smart Wireless made it easy to install and to quickly establish a connection with newly installed devices.

RESULTS

Early detection of the loss of flow is enabling operators to rebuild the pressure and quickly start the flow again, improving throughput and significantly increasing production over time. An automated solution is helping to improve safety as the need for personnel to enter this hazardous area is reduced. StatoilHydro has now implemented additional Smart Wireless devices on Platforms A, B and C, bringing the total to 90 wireless transmitters covering all production flow lines at Gullfaks.

“Installing additional wired measurement points at the wellhead would mean long cable trays and a lot of wiring. Wireless offers an inherent reduction in cabling infrastructure, complexity and weight, resulting in significantly lower installation costs.”

Anders Røyroy
Project Manager, Research & Development
Projects, StatoilHydro Norway

Emerson Process Management
12301 Research Blvd.
Research Park Plaza, Building III
Austin, TX 78759
USA
www.EmersonProcess.com

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