Rosemount™ X-well™ Technology reduces risk of line damage or failure on pressure safety system

RESULTS

- Improved system safety by preventing hydrate build up resulting in line or valve ruptures

- Eliminate down time by using non-intrusive temperature measurement

- Hundreds of thousands of dollars saved by preventing future system damage

"X-well Technology can be installed without process shut down, saving thousands of dollars in downtime and production loss."

APPLICATION

FPSO using CO_2 injection on lines to increase production on wellheads. Pressure Safety Valves (PSVs) are required for safe operation and allow gas to flow to a flare when pressure exceeds a given threshold.

CUSTOMER

Major FPSO Operator

CHALLENGE

A major FPSO operator needed to prevent hydrate build up on pressure safety release lines utilized on their carbon dioxide injection system. The system is equipped with PSVs to allow gas to flare when pressure in the line exceeds a certain threshold. In a high-pressure, low-temperature environment, water, natural gas, and carbon dioxide form hydrates that impede the flow of gas during emergency pressure releases.

Without temperature measurement it was not possible to monitor the PSV's for hydrate formations. Continued hydrate build up prevented the flow of gas from reaching the designed levels. Flow restriction eventually caused a rupture in the pressure release line requiring immediate shut down for repairs. For this customer, the estimated **cost of shut down amounted to $600,000** in lost production and repair costs. Due to the measurement location and flow rates it was decided that a traditional thermowell and sensor could not be installed. The high flow velocities were too difficult to design for a conventional thermowell and would require making costly and time-consuming modifications to existing piping.

SOLUTION

With Emerson's support, the customer identified 61 temperature measurement points that needed monitoring. Emerson's Rosemount 648 X-well Technology temperature transmitters were commissioned to solve their problem. These transmitters were placed downstream from the PSVs to monitor for temperatures indicating the buildup of hydrates. By monitoring for these conditions, the customer was able

Rosemount X-well Technology is also manufactured in SST for extra protection in corrosive environments.

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to act on the buildup before it caused additional ruptures eliminating future emergency shutdowns.

This preventative maintenance saved the customer hundreds of thousands of dollars in lost production and future repairs and ensured the safety of their operators working the system. By using X-Well technology the customer was able to implement these new temperature points without performing wake frequency calculations or making costly changes to existing piping. Utilizing the 648's *Wireless*HART® communication protocol means that the customer was able to integrate the new temperature points into their control system for easy monitoring using their existing Emerson 1410 Smart Gateways.

RESOURCES
White Paper
Get a copy of our White Paper at http://emr.sn/NM27
Flyer
https://www.emerson.com/documents/automation/flyer-temperature-measurement-assembly-rosemount-x-well-technology-accurately-measure-process-temperature-without-a-thermowell-process-penetration-en-80370.pdf
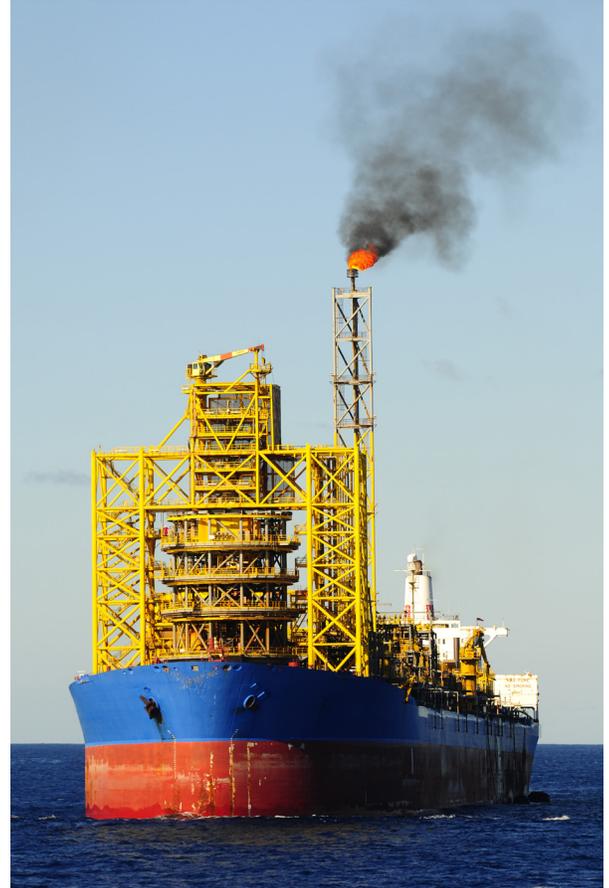**Videos**
Rosemount X-well How it Works
Rosemount X-well Overview
Rosemount X-well Non-intrustise Temperature Measurement

X-well Technology is available in wired and wireless versions and can easily integrate into an existing system for faster commissioning than conventional temperature measurement.

Linkedin.com/company/Emerson-Automation-Solutions
Twitter.com/Rosemount_News
Facebook.com/Rosemount
Youtube.com/user/RosemountMeasurement
Google.com/+RosemountMeasurement

Global Headquarters
Emerson Automation Solutions
6021 Innovation Blvd.
Shakopee, MN 55379, USA
+1 800 999 9307 or +1 952 906 8888
+1 952 949 7001
RFQ.RMD-RCC@Emerson.com

Europe Region
Emerson Automation Solutions Europe GmbH
Neuhofstrasse 19a P.O. Box 1046
CH 6340 Baar, Switzerland
+41 (0) 41 768 6111
+41 (0) 41 768 6300
RFQ.RMD-RCC@Emerson.com

Middle East and Africa Region
Emerson Automation Solutions
Emerson FZE P.O. Box 17033,
Jebel Ali Free Zone - South 2
Dubai, United Arab Emirates
+971 4 8118100
+971 4 8865465
RFQ.RMTMEA@Emerson.com

Asia Pacific Region
Emerson Automation Solutions
1 Pandan Crescent
Singapore 128461
+65 6777 8211
+65 6777 0947
Enquiries@AP.Emerson.com

00830-0800-4648_RevAA

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