



SITRANS LR250 and Pointek CLS200

Level measurement precision in North American oil fracking



A newly discovered oil patch in western North America uses Siemens level technology during oil and natural gas extraction. SITRANS LR250 continuous radar for liquid level measurement plus Pointek CLS200 capacitance point level offer a winning combination in this application.

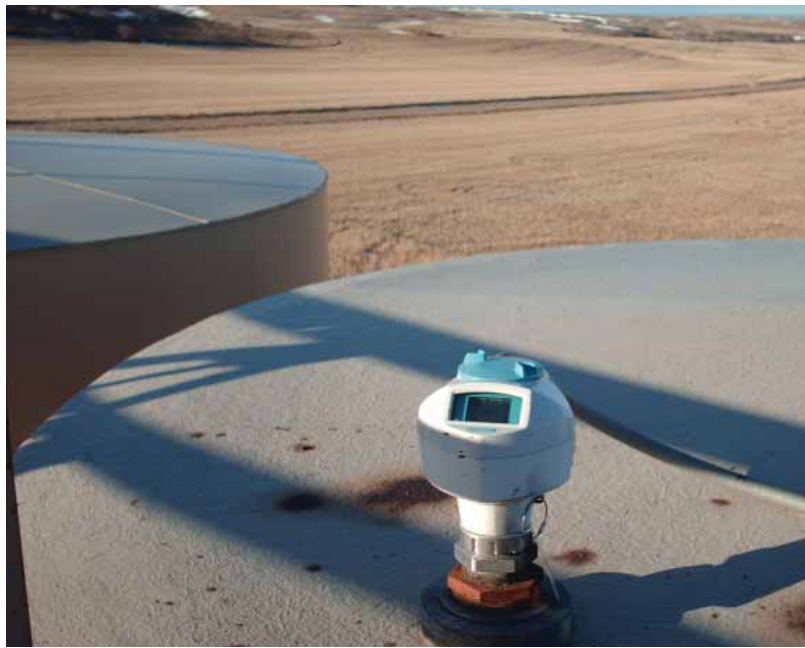
Challenge

Hydraulic fracturing, or 'fracking,' is a process of creating fractures in rock using pressurized fluid. Companies use this technique to extract substances like petroleum or natural gas.

This North American oil company pumps fracturing fluid – in this case, water – into a drilled hole until the pressure formed is strong enough to fracture the rock. Once the rock cracks, operators inject a 'proppant' into the fracture, typically sand. The proppant keeps the crack open once the pressure is reduced.

Operators then pump out the oil and natural gas, which is mixed with the water and sand. Oil must be separated from the water and sand, as it is stored in extraction vessels before further processing.

With hundreds of locations, the company has between four and twenty vessels per site. Many of these locations are remote,



SITRANS LR250 radar transmitter provides accurate and reliable continuous level measurement on the company's extraction storage vessels.

so any maintenance is very costly. As well, with up to 265 liters (70 US gallons) of liquid extracted each second, level monitoring of these vessels must be accurate and extremely reliable.

Solution

The company installed Siemens level measurement devices – both continuous and point level technology – on all of the extraction vessels throughout its hundreds of sites. SITRANS LR250 continuous liquid level radar transmitter measures the level of oil and water in the extraction vessels.

For high-level backup, Siemens Pointek CLS200 level switch ensures that no spills occur. The company chose the cable version of this switch, which can be adjusted to an appropriate length for any tank size during installation in the application.

These switches also perform interface detection in the extraction pipeline, determining what type of substance is being extracted. First the water and sand are pumped through, and at the point when oil begins flowing through the pipeline, Pointek CLS200 switches a valve to direct the flow to the separator.

Benefits

Setup of SITRANS LR250 was simple using the transmitter's Quick Start Wizards, with only a few parameters required for basic operation. With three-millimeter

(0.118 inch) accuracy, the transmitter provides the company the level measurement precision it requires.

As a high-level backup, Pointek CLS200 gives the company confidence in their level measurement, since spills can be expensive to clean up. During the switch's interface detection, Pointek CLS200 responds to any material dielectric change over a dielectric of 1.4 by detecting a change in oscillating frequency. Immediate detection of the oil in the pipeline allows for fewer waste products in the vessels. As well, if the Pointek CLS200 detects a lack of oil flowing through the pipeline, operators immediately know that something has changed and that the system might require servicing.

Both of these Siemens level measurement technologies keep the oil fracking process running smoothly, substantially reducing maintenance costs at all of the company's sites.

Siemens AG
Industry Sector
Sensors and Communications
76181 KARLSRUHE
GERMANY

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