Reliable remote monitoring of tank levels in Western Canada's oil fields saves time and money.

Oil Field Remote Level Monitoring with IQ Radar

Challenge

In the vast oil fields of Western Canada, monitoring tank levels at remote sites is a challenge. Site visits are costly and time consuming. Problems at unattended sites can go undetected for some time. A malfunctioning pump can halt production or an overflowing tank can spill valuable oil and damage the environment.

The typical remote oil extraction site has a number of 1000-barrel holding tanks. Some contain oil, separated from the crude in a treater. Others hold waste salt water. The oil will be transported to a refinery by truck or pipeline. If the pipeline pump is linked to the oil tank's level gauge, accurate level measurement is critical.

Waste water is pumped into a disposal well. Spill cleanup is expensive, so reliable level measurement, pump control and alarms are essential. Hydrostatic level switches were used for disposal pumps, but their contacts corrode over time, resulting in unreliable readings. This increased the risk of tank overflows or damaged pumps if a tank runs dry. A better solution was needed.

Solution

Acutec Systems Ltd. is an integrator of technology solutions, located in Lampman, Saskatchewan, in the midst of the Canadian prairies. "We have worked with numerous oil company clients to solve this remote monitoring challenge," says John Grimes, President of Acutec. "They need an affordable, easy to use, and reliable method to retrieve critical site data from anywhere, at anytime."

The Acutec solution combines its own Data Link 2500 communications unit and Milltronics IQ Radar instruments for continuous level measurement. The system lets producers check remote tank levels easily. Data Link converts any industry standard signal to a voice report. When a field operator phones the site, each instrument verbally reports its exact value. Users can also dial in by computer to retrieve data and for remote control.

At a remote site for Lexxor Energy Inc., for example, Acutec installed Milltronics IQ Radar devices on its oil and waste salt water tanks. IQ Radar controls the variable-frequency drive on the water disposal pump. The radar instruments are connected to an alarm system that notifies company personnel when fluid levels are high or low. Field personnel can access a verbal report of tank levels by cellular, landline or PC. Other oil companies are using similar applications, including Talisman Energy, Burlington Resources, Empire Energy, Maxx Petroleum, Tethys Energy, Upton Resources, and Midale Petroleum.

Benefits

"We are very satisfied with the performance of the IQ Radar unit," says Grimes. "It has proven a reliable, trouble-free instrument even in the extreme heat and cold we experience in this region."

Reliable level measurement reduces the risk of environmental damage from spills, avoiding cleanup time and costs. Smooth operation of the variable-frequency drive on the salt water tanks reduces operating costs through reduced pump power usage. Less wear and tear also prolongs life of pumps and drives.

The remote monitoring system reduces the need for site visits, reduces maintenance and travel costs, and frees staff for other tasks. It helps detect problems early for quick action to fix a stuck valve or pump problem before oil is lost or damage occurs through overflows.