National oil & gas company simplifies operations with Micro Motion Coriolis meters

RESULTS

- Reduced uncertainty for daily balances of crude oil from operations to transportation areas with accuracy of 0.05% for flow and 0.0002 g/cm³ for density
- Reduced maintenance costs which resulted in $500,000 per year in spare parts and manpower saving
- Implemented real-time and remote monitoring from storage and pumping stations, to the manager's office, using WirelessHART™

APPLICATION

A major national oil operating company in Mexico uses positive displacement (PD) meters in all the storage and pumping stations that receive crude oil production. Additional measurement of the crude oil quality is required when utilizing PD meters, specifically API gravity and BS&W (basic sediment and water). To make this measurement, sampling systems capture product samples, which are sent to the laboratory for analysis. The data is then used to adjust standard volume calculations for the overall daily balances. These sampling procedures and laboratory analyses introduce inaccuracies and uncertainties in the final calculations which add constant deviations to the daily balances.

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CHALLENGE

The company faced many challenges with their storage and transport operations including:

- Poor accuracy in crude oil balances
- High maintenance costs for PD Meters
- Frequent shutdowns from manual sampling to calibrate PD Meters
- High operation costs
- Inability to access real-time data for ongoing and critical operational decisions

The company required a reliable, accurate measurement solution that could be easily integrated into the systems.

General storage and pumping station

SOLUTION

The company tested Micro Motion® ELITE® Coriolis flowmeters to replace the PD meters which resulted in immediate accuracy improvement of the overall crude inventory balance.

Micro Motion®

For more information:
www.MicroMotion.com/oil-and-gas
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EMERSON™
Process Management

With improved accuracy, less meter troubleshooting, and overall improved meter reliability and performance, maintenance and spare costs were reduced by $500,000 per year.

The company leveraged the Net Oil Computer capability from the Coriolis meter for in-line water cut determination and reduced the need for manual samples. This provided an excellent, real-time quality crude oil measurement for simplified operations.

In addition to reducing meter maintenance costs, the operations group used Smart Meter Verification and WirelessHART™ communication with Smart Wireless THUM Adapters for remote performance monitoring. These simple system checks eliminated the frequent calibrations required by the PD meters. For the annual calibrations, the company was also able to perform on-site, local calibration using National Primary Calibration Lab.

Gathering, storage and pumping station

Micro Motion meters at pipeline gathering station

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