

Coriolis Flow Meters Extend Calibration Intervals at Petrochemical Company

RESULTS

- Customer avoided \$500,000 in unnecessary calibration costs and \$300,000 in unplanned downtime
- Smart Meter Verification provided measurement confidence as it diagnosed the entire flow meter system
- Performed in-situ, Smart Meter Verification confirmed each meter's performance within specifications
- An agency recognized report from Smart Meter Verification allowed for extending re-calibration/proving intervals



Smart Meter Verification enables extension of calibration intervals and reduction of unplanned downtime.

APPLICATION

Under a contractual agreement, a leading petrochemical company was selling product through pipelines to another company (buyer) via custody transfer. One hundred Emerson Micro Motion Coriolis flow meters with 5700 transmitters were involved. Coriolis technology was involved because it is recognized for its significant accuracy improvement over many other flow technologies, even those that are temperature and density compensated.

CUSTOMER

A leading Petrochemical company

CHALLENGE

Given that errors in measurement for custody transfer can be extremely expensive, both the seller and buyer required a way to ensure the one hundred Micro Motion Coriolis flow meters were maintaining their accuracy over time. To verify accuracy, it was required that the meters were tested twice per year without shutting down the process. To avoid process shutdowns, a by-pass line was installed in each meter run. They were then able to manually remove the meters from the lines and perform the routine verifications and calibrations without process shutdown. A shutdown would have been expensive and time consuming.



SOLUTION

To reduce the high cost of manual verification and calibration, Smart Meter Verification was installed on each meter (via field licensing or transmitter electronics upgrades) to make in-situ meter verification possible. Smart Meter Verification provided confidence to both companies that the meters were performing within factory specifications, which meant the invoice and quantity of product delivered was accurate.

With insight into each meter's health, they were able to plan for calibrations and ultimately extend calibration intervals. To optimize their compliance, the Smart Meter Verification testing results were documented via the agency-recognized report detailing meter information, process conditions and results. Integration of Smart Meter Verification into their Distributed Control System (DCS) also enabled remote in-situ testing versus manual surveillance. By implementing these Smart Meter Verification best practices to proactively detect meter degradation, the petrochemical company documented three less days of unplanned shutdown.

Through the implementation of Smart Meter Verification, the plant was able to save a significant amount of time and money. The petrochemical company realized a total savings of \$800,000. The return on investment was achieved over three months.

- **\$100,000 in-situ testing savings**
(\$500 per unit X 100 meters X 2 times per year)
- **\$400,000 savings not having to bypass meter run to perform routine maintenance**
(\$2,000 per occurrence x 100 meters x 2 times per year)
- **\$300,000 savings on unplanned downtime averted by detecting meter degradation**
(\$100,000/day X 3 days to get new meter)

\$800,000 total savings



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