

\$1M per year Ethylene savings with Micro Motion Coriolis

BENEFITS

- Saved \$100,000 per month with billing improvement
- Assured pay and check meter agreement
- Reduced process interruptions and staffing
- Eliminated proving challenges



APPLICATION

Ethylene fiscal transfer accounting and billing issues at a major European chemical company's US-based operation.

CHALLENGE

A European chemical company had been using dP/orifice meters at its US operation, which only provided a volume-based measurement. Additional measurements for pressure and temperature were needed to be taken to determine the actual Ethylene density. This was problematic for the process because it required an equation of state to determine product mass, the unit for fiscal transactions. The US chemical plant had been experiencing ongoing issues with accounting and billing because of the indirect mass measurement provided by dP/orifice meters.

A mass balance revealed that the manufacturer had been under-billing outside customers. Because Ethylene is a valuable chemical feedstock for various plastics (worth around \$0.50/lb), the 1% under-billing on their transfer stations represented discrepancies of more than \$100,000 per month.

Volume-based measurement devices are inherently problematic for ethylene, as pressure and temperature must also be measured and calculations made to determine density and then convert to mass. Likewise, because dP/orifice meters were used in the custody transfer measurement, it was not possible to "prove" or easily verify these measurement technologies to ensure their accuracy and identify the billing discrepancy.

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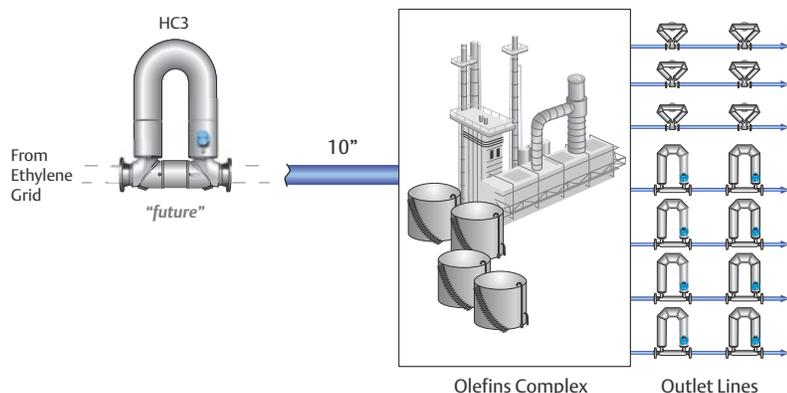
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SOLUTION

Two Micro Motion ELITE® Coriolis flowmeters (Model CMF200) were installed at the chemical plant as a trial in one of the custody transfer stations. One meter was used as the billing meter and the other was used as the check meter. Since Micro Motion flowmeters measure mass directly, the challenge of proving traditional meters on Ethylene was removed. Micro Motion Meter Verification also enabled the chemical producer to prove fiscal meters, ensuring structural and measurement integrity.

As a result of the successful trial and the customer saw the enhanced measurement capabilities possible, an additional 14 meters were installed. Assuming all 14 stations were under-registering the ethylene measurement by 1%, a \$100,000 per month billing improvement was expected after installation of all Micro Motion Coriolis flowmeters.



Pay/check
Ethylene measurement system

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