

Accurate custody transfer and batch measurement with Micro Motion density meters

RESULTS

- Reduced spares inventory
- Highly accurate and reliable density measurement
- Compliance with fiscal measurement standards
- Minimal maintenance



APPLICATION

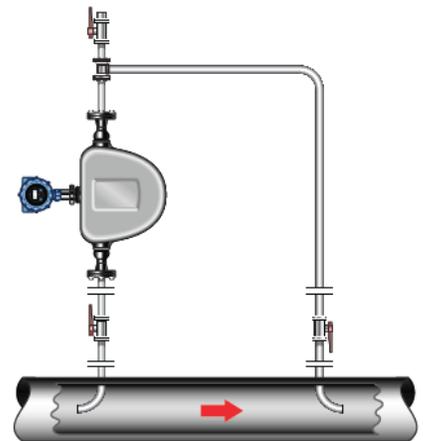
A major pipeline provider operates a 1,900 mile common carrier pipeline system that transports refined petroleum products with more than 72 different specifications for over 60 different shippers. The 28-inch diameter pipeline stretches between Port Author, Texas and Tulsa, Oklahoma. A 10-inch line between Houston and Arlington, and a 24-inch line from Tulsa, Oklahoma to Hammond, Indiana provides additional capacity.

CHALLENGE

Throughout the pipeline, network density and volume flow measurements are used to determine mass flow of transported products within high pressure custody transfer metering applications. Here, density measurements must be extremely reliable and accurate to ensure they are compliant with fiscal measurement standards. Separately, within the large pipe diameters density measurements are used to determine the purity of transported products as part of a batch recognition process. Density measurement is also used for interface detection to recognize when the product type has changed.

SOLUTION

For the custody transfer application on the 10-inch line Emerson's Micro Motion liquid tube densitometers in conjunction with a volume turbine meter provide highly accurate continuous mass flow readings. The Micro Motion Compact Density Meter (CDM) provides density reading with variance of just 0.0001 g/cc and just as importantly offers repeatability of 0.00005 g/cc. Micro Motion density meters are extremely reliable having no moving parts and



Typical installation of a CDM density meter



For more information:
www.MicroMotion.com/oil-and-gas
www.MicroMotion.com



requiring minimal maintenance. Despite the large pipe diameters, this pipeline provider has been able to meet the required standards for custody transfer.

Within the batch recognition application, Micro Motion fork densitometers have been installed within still wells (to enable pigging) at the receiving end of the pipeline. Providing variance of 0.001g/cc and repeatability of 0.0001g/cc these devices provide a continuous density measurement that enables the start and finish of batches to be identified, the quality of product being transported to be monitored and subsequently possible leaks to be flagged up should unusually high air content be found in the product. The vibrating fork designs offers a solution that requires minimal maintenance and is suitable for varying pipe sizes. In addition, this solution has enabled this customer to minimize its spares inventory.



Micro Motion CDM for Custody Transfer Applications



Micro Motion FDM for Interface Detection

