

Micro Motion® Meets Quality and Stability Requirements for Blending Directly into Pipeline

BENEFITS

- Consistent and reliable product quality
- Improved process control
- Improved process uptime
- Decreased equipment and maintenance costs



PROCESS

A U.S. petroleum refiner produces several grades of gasoline by blending various components into a tank which feeds directly into a customer's pipeline. The customer operates one of the largest independent petroleum products pipeline systems in the U.S. Planned modifications to the process include blending directly into the pipeline, allowing the refiner to eliminate the tank and the current custody transfer instrumentation (a volumetric meter and a densitometer).

Estimated savings of more than \$300,000 per year

CHALLENGE

Blending directly into the pipeline is controlled by state license. To maintain the license, the refiner must be able to control blend quality to meet state requirements. The refiner used a gas chromatograph to measure blend quality, and found that the final blends often did not meet specifications. The problem was traced to the turbine meters used to control blend ratios: Bearing wear caused degradation of accuracy.

This situation caused several ongoing problems:

- To replace the bearings, the turbine meters must be taken out of line, resulting in process downtime, lost revenue, and maintenance and equipment costs.
- The refiner had received multiple official warnings that the license to blend directly into the pipeline would be revoked if blend quality was not improved and stabilized.

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Micro Motion CMF400 blend meters control gasoline blend ratios



For more information:
www.EmersonProcess.com/solutions/refining
www.micromotion.com



SOLUTION

The turbine meters were replaced with seven blend meters (five CMF400 meters, one CMF200 meter, and one D600 meter) and one total blend meter (a second D600 meter). Each blend meter controls a single component, and the total blend meter measures the final product. Model 2700 transmitters were installed with each meter. To support blending directly into the pipeline, the custody transfer option was purchased with the total blend meter.

With a flat spec accuracy of 0.1%, the Micro Motion meters have enabled the refiner to improve the mass balance of the process by 3.5%. When this is combined with the savings in maintenance and process uptime, the refiner estimates savings of more than \$300,000 per year. More importantly, because the blend quality consistently meets specifications, the direct blending license is no longer in jeopardy.



Micro Motion D600 blend meter controls additional component



Micro Motion D600 total blend meter measures final product