

NGL Railcar unloading with Micro Motion® Fork Density Meter

RESULTS

- Confidence in railcar unloading application due to prior success with using the Fork Density Meter (FDM) in pipeline interface detection
- Confirmation that the batch was completed
- Significant cost savings due to increased accuracy in measurements



Fork Density Meter ensures accurate product transfer

APPLICATION

The company operating integrated midstream services across natural gas, crude oil, condensate and NGL commodities, including fractionation and transfer of products via pipeline, trucks and railcars across the United States. The company needed to measure the density of the product being unloaded from a railcar into a south Louisiana pipeline for product quality assurance and verification of batch completion.

CUSTOMER

A major international oil & gas manufacturer.

CHALLENGE

Each railcar is loaded with a singular product that can range from NGL, Propane, Butane, or similar refined product. To unload the railcars into the pipeline a nitrogen blanket is added to the top of the railcar to push product out of the bottom of the railcar. Previously, the customer had no way of knowing when the railcar was actually empty or if the product being unloaded was the expected product. This left the customer with the challenge to verify that all of the product was successfully unloaded from the railcar and confirming that the batch was completed. Additionally, sampling of the product with a pycnometer at each point would be a manually intensive task.

SOLUTION

The customer installed a Micro Motion® Fork Density Meter (FDM) at each railcar unloading header. The signal was sent to their PLC to read live density. If the real-time density deviated from specification, the controller could close the valve and stop that railcar from unloading into the pipeline, minimizing contamination of the pipeline product. Additionally, when density levels lower beyond pre-set parameters, thereby identifying nitrogen in the line, the control system closes a valve indicating the railcar is empty. An incomplete unloading would leave product in the railcar, causing thousands of dollars of rework to reposition and unload, as well as the possibility of shipping a railcar out that was supposed to be empty.

The customer was confident in the FDM's success in this railcar unloading application due to prior success with using the FDM in pipeline interface detection as well as a very large installed base of Micro Motion Coriolis flow meters.

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