USE CASE

Improving custody transfer accuracy by removing free liquids upstream

This use case explores how to stabilize custody transfer measurement by removing upstream liquids to decrease sonic meter drift.

Quick Facts

Industry	Gas transmission	**Solution**	Innopipe inline gas-liquid separation technology
Location	Kuwait power station	**Timeline**	12 to18 weeks from drawing approval
Challenge	Unstable custody transfer readings caused by intermittent liquid contamination	**Results**	>99%+ liquid removal, reduced slugging risk, improved equipment protection, maintained piggability

The Challenge

Custody transfer meters are designed to measure accurately in dry gas conditions. Temperature swings and elevation changes cause small amounts of condensate and water to drop out upstream of the metering station. Even a thin liquid film on the pipe wall is enough to scatter ultrasonic signals and distort measurement accuracy.

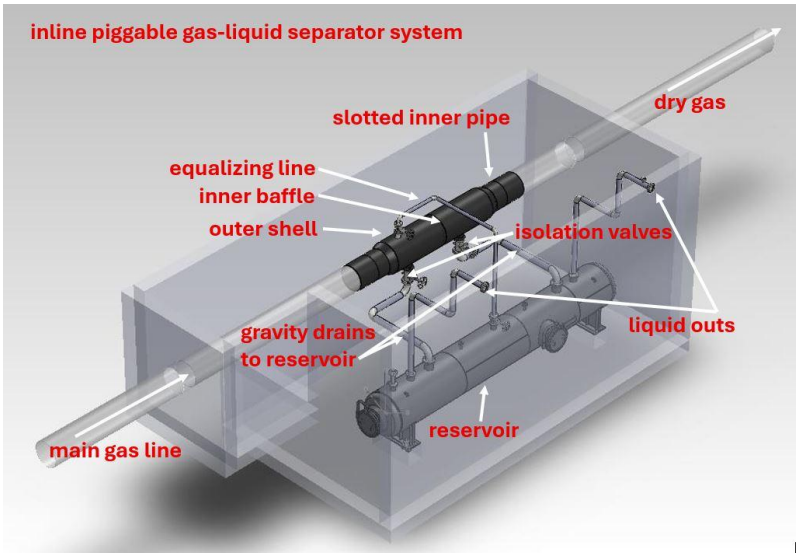
The Solution

The Innopipe inline separator technology mitigates meter drift and reduces diagnostic alarms while extending calibration intervals. These issues increase operational workload and create uncertainty in fiscal reporting. The Innopipe is a practical way to control liquids without installing a large separator or modifying the station layout.

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An Innopipe inline separator was installed upstream of the meter run. This underground vault installation accommodates collection reservoir cleanouts. This design combines a pipeline code Innopipe along with a pressure vessel reservoir with manways.



At typical transmission velocities, liquids naturally migrate to the pipe wall while dry gas flows in the core. Where a conventional separator fights this flow regime, the Innopipe technology exploits this behavior to capture the wall-bound film through engineered slots and direct liquids into Innopipe's outer chamber. Gas continues to flow without disturbance, while liquids drain to a collection reservoir.

This approach maintains pipeline piggability, adds minimal pressure drop, and fits within the existing station footprint. Innopipe continuous liquids removal restores single-phase conditions required for accurate ultrasonic measurement.

Results

The solution delivers measurable benefits, including:

- Stable ultrasonic signal paths and reduced diagnostic alarms
- Improved reliability in custody-transfer measurement

Key Outcome

Upstream liquids were successfully removed, and dry-gas conditions were restored providing accurate metering.