

Expro Excellence

Expro provides client unique gas void fraction (GVF) measurement to improve separator performance and accuracy

Acumen



Customer challenges

- Industrial Vox Analyzer supplies flow measurement solutions to the oil and gas industry, including gas-liquid cylindrical cyclone (GLCC) separators – a compact two-phase separator which utilises centrifugal and gravitational forces to separate gas and liquid phases
- Oil and water liquid flow rate is typically measured with turbine or Coriolis meters; the water cut is determined via a density measurement using either a Coriolis or microwave device
- All measurements (flow, density and water cut) assume complete separation, which is not always achievable, especially over a wide range of flow conditions and process fluid types; incomplete separation and subsequent gas carry under becomes the main source of error given the Coriolis' sensitivity to the difference in gas and liquid densities
- In heavy oil applications, separation efficiency is particularly challenging; gas in the separator liquid leg can result in significant net oil measurement errors
- Gas carry under is recognised as a major source of error however it has been impossible to measure the free gas to correct the liquid measurement in real time



Expro Excellence

- Expro's sonar technology measures entrained GVF and corrects the volumetric rate and fluids density measurement in real time
- Laboratory and field tests have validated the ability to correct primary phase measurement devices in presence of up to 20% GVF
- Expro's PassiveSONAR™ meters:
 - provide an accurate real time measurement of entrained gas
 - are the only clamp-on sensor available to measure GVF
 - have been installed on many convention and GLCC separators
- No field shutdown or flow diversion associated with meter installation, commissioning or testing

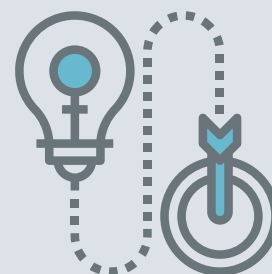
Value to the client

- The GVF measurement is used to correct Coriolis measurements of volumetric flow rate and mixture density
- PassiveSONAR provides quantitative measurement of separator efficiency and enables accurate flow and net oil measurement where there is incomplete gas/liquid separation
- Enables water cut devices to accurately report net oil in the presence of entrained gas
- PassiveSONAR enables the use of small footprint GLCC technology in lieu of larger three-phase horizontal gravity separators

“The GVF meters have been used in one of our main products. We are really happy about the performance of the meter.”

Oswaldo A. Sanchez
General Manager,
Industrial Vox Analyzer

Innovative solution



Contact

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