

Expro Excellence

Subsea well riser monitoring for flow assurance and production surveillance

Well Flow Management | Flow Surveillance



Objectives and background

- The operator had deep water subsea high rate gas condensate wells which were tied back to the existing production platform which had a potential peak well production rate of 200 MMscfd
- Currently early production on the risers ranged from ~100-270 MMscfd with CGRs ranging from 45-55 STB/MMscf and water cuts ranging from 1.5%-4%. Pressure ~ 125 barg
- The customer required measurement on the comingled production risers specifically for:
 - Flow assurance during well start-up operations specifically given the concerns over hydrate prevention in a long tie back
 - Reservoir performance measurement testing by difference where each riser supported a three well subsea template
- Individual MPFM for each subsea wellhead was cost-prohibitive given the customer's previous experience with subsea MPFM. Flowline sizes were 12-inch which is cost-prohibitive for a topside inline multiphase meter
- Field life above 20 years with increasing water production throughout the life of the field

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- Due to space constraints on the existing facility avoiding significant modification costs the customer required an alternative to traditional in-line metering
- Expro was approached to provide non-intrusive ActiveSONAR meters and flow computers to provide real-time production surveillance on ten 12in risers on the platform
- The customer required Expro to participate in flow loop trials to demonstrate functionality across the full range of process conditions anticipated at start-up, plateau production, and late field life (GVF range 88-100%)
- Customer also required assurance that clamp-on SONAR could function on one-inch thick duplex piping where they had concerns from experience with traditional industrial clamp-on ultrasonic meters

Value to the client

- Expro successfully completed flow loop trials demonstrating measuring capability across the full range of process conditions and the duplex piping
- The small footprint SONAR meter was compatible without having to make any modifications to the existing piping network on the platform
- Expro has installed and commissioned multiple meters on the risers and live data is being streamed to the customer to assist with well operations and production forecasting

Time saving



Insight

