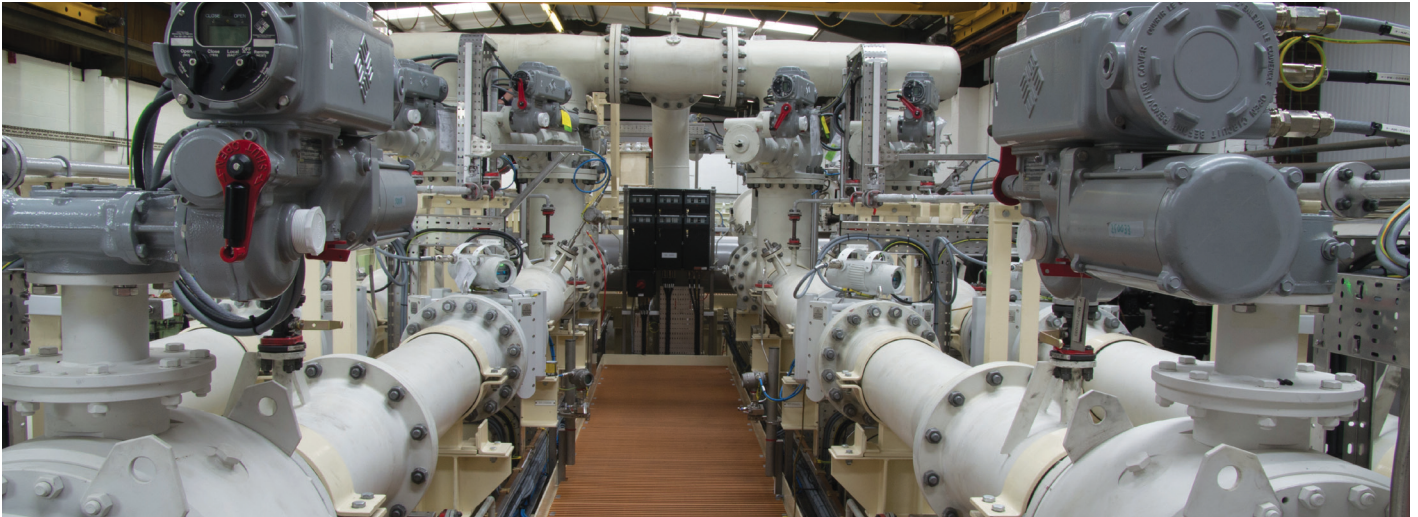




Application Notes

Fiscal Oil Metering



Project Name:
Quad 204 Project

Location:
Quadrants 204 and 205 of the UKCS, approx.
130km west of Shetland

EPC Contractor/Consultants:
Hyundai Heavy Industries

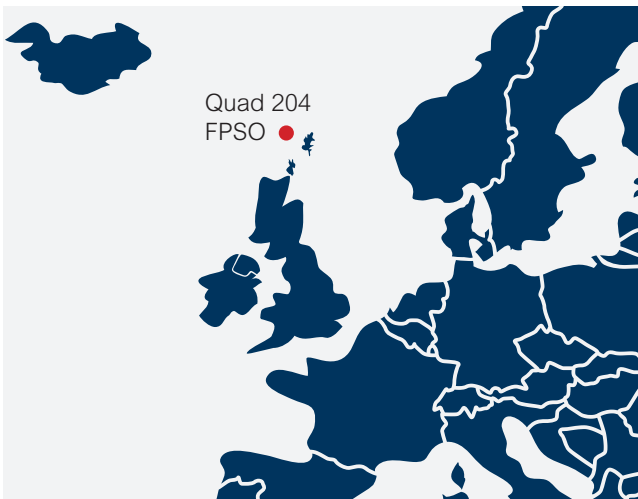
End User:
BP

Scope of Application

The Quad 204 FPSO is a replacement for the Schehallion FPSO and will be located west of Shetland. The Schehallion field is one of the largest in the UKCS and is located in one of the most challenging offshore environments in the sector.

The scope of supply consists of one crude oil fiscal metering system, comprising 4 x 33% export streams, utilising 12" ultrasonic meters with a 30" bi-directional prover and sample system to measure offloading of oil at 6400 m³/h, along with an associated control system.

Alderley has also supplied a gas metering system and a single deoiling hydrocyclone vessel to the Quad 204 FPSO.





Applicable Standards

- ASTM D1250: Standard Guide for Use of the Petroleum Measurement Tables
- API MPMS Chp. 4.2: Proving Systems, Section 2 - Displacement Provers
- API MPMS Chp. 5.8: Metering, Section 8 - Measurement of Liquid Hydrocarbons by Ultrasonic Flow Meters Using Transit Time Technology
- API MPMS Chp. 8.1: Sampling, Section 1 - Standard Practice for Manual Sampling of Petroleum and Petroleum Products
- API MPMS Chp. 8.2: Sampling, Section 2 - Standard Practice for Automatic Sampling of Petroleum and Petroleum Products
- API MPMS Chp. 11: Physical Properties Data and Other Volume Correction Factor (VCF) Standards for Hydrocarbons
- API MPMS Chp. 21.2: Flow Measurement Using Electronic Metering Systems, Section 2 - Electronic Liquid Measurement
- ISO 3170: Petroleum Liquids - Manual sampling
- ISO 3171: Petroleum Liquids - Automatic pipeline sampling
- ISO 5168: Measurement of fluid flow - Procedures for the evaluation of uncertainties

Main Equipment

- Single skid 21m long x 4.6m wide x 4.2m high
- 4 x 33% 12" 300# RF ultrasonic meters c/w control valves and isolation valves
- 1 x 30" bi-directional prover c/w 4-way valve
- Pressure and temperature instruments
- Small bore drain pipe and valves
- Control system including S600+ flow computers
- Fast loop sample system c/w grab sampler, densitometers, BS&W

