



Project: Hæwene Brim FPSO

Contractor: AMEC

End User: Shell / Bluewater

Product: Metering & Sampling

Location: UK, Offshore

Year: 2012

Application

These three contracts were all awarded by Amec in Aberdeen, and are all related to the Hæwene Brim Floating Production, Storage and Offloading (FPSO) vessel deployed on the Pierce Field.

The three scopes of supply include:

- Oil Metering System (C208)
- Sampling System (C211)
- Orifice Meter Runs, Loose Meter Runs, Supervisory System (C212)

C208 - Oil Metering System

The scope of the Oil Metering System contract was to replace the existing Oil Metering System which had come to the end of its operating life. The new system catered for technological advancement in Fiscal measurement by incorporating liquid ultrasonic flowmeters. The scope for this project includes 1 off complete oil meter stream comprising:

- 18" meter runs
- 2 off 18" ANSI 300 Caldon 280Ci, custody transfer standard, liquid ultrasonic flow meters. Indicating pressure transmitter, RTD temperature element & thermowell, test thermowell, drain connection with DBB isolation, motor operated, full bore DBB valve with manual cavity leak detection facilities.
- Facilities for venting and draining were included.

C211 - Sampling Systems

The scope of the Sampling System was to provide the ability of sampling the output from the 1st stage separators and the test separators that are installed on the FPSO. There are three samplers which take a grab sample for the water, gas and oil discharges from the separators.

The scope for each set of three samplers was the same and comprised of:

- 3 off Sample Probes (Quills) c/w Double Block and Bleed valves (4)
- 1 off Sample Cabinet

C212 - Gas Metering System

The scope of supply for the Gas Metering System and the loose meters included:

- 16" Orifice Meter Run - Manufactured in Duplex (S31803)
- 4" Orifice Meter Run - Manufactured in Duplex (S31803)
- 8" Coriolis Flow Meter - 1st Stage Sep manufactured in 316L Stainless Steel
- 3" Coriolis Flow Meter - Test Sep manufactured in 316L Stainless Steel
- 12" V-Cone Flow Meter - 1st Stage Sep manufactured in 316L Stainless Steel
- 8" V-Cone Flow Meter - Test Sep manufactured in 316L Stainless Steel
- 4" Magnetic Flow Meter - 1st Stage Sep manufactured in 316L Stainless Steel
- 2" Magnetic Flow Meter - Test Sep manufactured in 316L Stainless Steel
- 8" Watercut Meter - 1st Stage Sep manufactured in Carbon Steel
- 3" Watercut Meter - Test Sep body manufactured in Duplex (S31803)
- FloBoss S600+ Flow Computers

Challenges

As with all upgrade and replacement projects, considerable "loose" scope was required. Therefore we had to ensure that the required scope was engineered in such a way as to ease site installation and commissioning.