



Project: Golden Eagle

Contractor: Nexen Petroleum

End User: Nexen Petroleum

Product: Oil & Gas Metering

Location: UK, Offshore

Year: 2011

Application

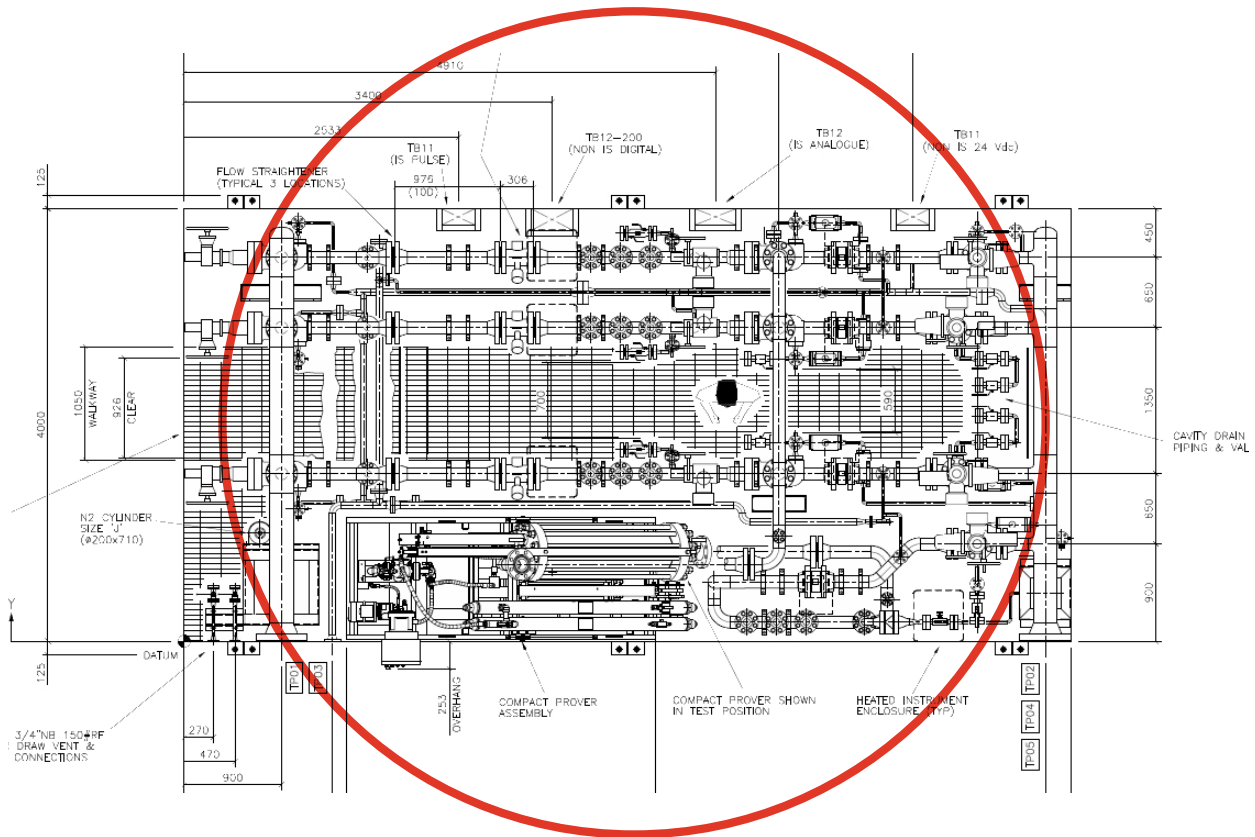
The main scope of supply comprised 2 off Skid Packages for both Oil and Gas Metering c/w Sampling System, Analyser House and Control System. The contract was placed directly by Nexen petroleum for their Golden Eagle asset in the UK North Sea.

Description

The scope of supply included the following:

- 1500# Gas Metering Skid using LTCS materials c/w 2 off 100% bi-directional USM Meters, Hub Ended Main process pipework c/w special Inconel trim isolation valves.
- Stainless Steel Analyser House c/w 2 off Gas Chromatographs, 2 off Dew Point Analysers, 2 off H₂S Analysers (GC's), sample conditioning, manual spot sampling system c/w 2 off 300ml sample receivers.
- 900# Oil Metering Skid using Super Duplex Materials 3 off 50% Turbine Meters c/w Super Duplex Compact Prover.
- Auto fast loop sampling (Jetmix) Daily (1L) & Weekly (3L) automatic Sampling c/w constant pressure receivers.
- Manual Sample Point with 2 off 1L receivers, 2 off Density & 2 off Water in Oil Analysers.





- Swinton Technology Control System consisting of dedicated 'Floboss S600+' Flow Computers for Gas Export, Oil Export metering streams and Oil Export Compact prover.
- Prestige' Supervisory System 'Floboss S600+' Flow Computers dedicated to Production and Test Separators c/w'Precise' Virtual Flow Computer Applications.

Challenges

Some of the challenges OGS faced and overcame during the execution of the project included:

- The client required the oil system to be manufactured in Super Duplex materials with special NORSOK material specification



and testing requirements. The gas system manufactured in Low Temperature Carbon Steel was also complex with Hub Ended pipework and Inconel Trim valves with special gas testing requirements.

- OGS advised the client on the national metering standards and what OGS believed was the best measurement technique to comply with those standards. The client agreed with the OGS concept and confirmed that the OGS interpretation was correct. This saved the client much time working with the government department responsible for the national standards.
- The OGS concept included the requirement for a Compact Prover on the oil system. There is a limited supply chain for this product

and there had only been one compact prover ever made previously in Super Duplex, and none with the same material content and testing requirements. This was a high risk element to the complete package and required additional levels of engineering and quality management to ensure that it was delivered on time and to the client's specifications.

- The project has a high turn down and it was decided that a fast loop sampling system would not be suitable without the use of a special Jet Mixing System. This equipment also has a limited supply chain and special attention was again needed to ensure compliance with the same special NORSOK material content and testing requirements for Super Duplex materials.

