

C185 | BP | Aurora Sullom Voe Project

Gas Export Metering Skid



Project:	Aurora Sullom Voe	Contractor:	Wood Group Engineering	End User:	BP
Product:	Gas Export Metering Skid	Location:	UK	Year:	2009

Application

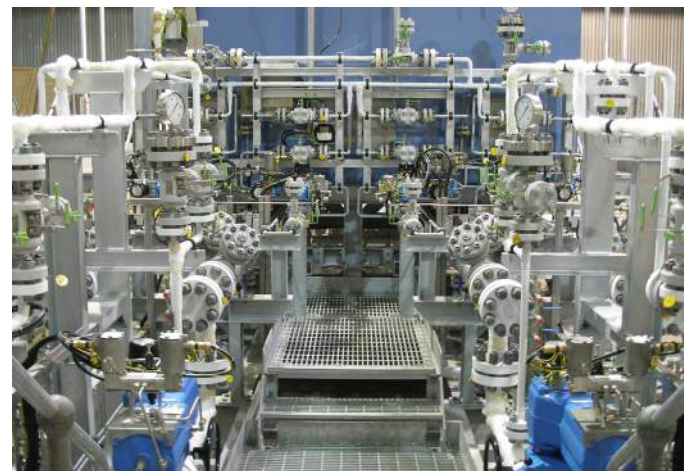
This contract was awarded by Wood Group Engineering for a Gas Metering system to be installed at BP's Sullom Voe Oil and Gas Terminal on the Shetland Islands of Scotland as part of the Aurora Development.

This large system weighed approximately 25,000kg and was 14m long by 3.8m wide and 4.2m high. The primary user of this rich gas stream is the site power station and any excess fuel will be exported via a new gas compression and dehydration system prior to further sweetening and onward export to the Magnus installation.

Description

The metering skid consists of 4 x 3" streams, with 2 streams (duty & standby) for high flow and 2 streams (duty & standby) for low flow. The package is suitable for a flow range of 500 to 16,244kg/hr. The system was completely skid mounted, fabricated, piped, cabled, with all valves and necessary instrumentation, assembled and tested ready for installation at site.

The flow meters are Single Chamber (Simplex) Orifice Plate & Carrier with flow conditioner and upstream and downstream straight lengths according to ISO 5167. The inlet of each stream has 2 trunnion mounted, full bore ball valves with a bleed in between for double block and bleed isolation. The outlet of each stream is provided with an air operated trunnion mounted ball valve and a manual trunnion mounted ball valve with a bleed in between for double block and bleed isolation. A GRP housing (3000mm long x 2500mm wide), manufactured with a 100mm internal GRP base flange fixed to a Steel Sub-frame was also supplied (refer to main picture) fitted on the overall skid.



Challenges

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

- The composition of the gas was such that NACE (NACE MR-01-75) requirements had to be adhered to. Even though a H₂S scavenger was used to remove almost 90% of the H₂S.
- Due to the site conditions and to ease on site delivery and erection services, this complete modular Metering System was designed to maximise the extent of pre-fabrication and testing in the controlled environment of the OGS fabrication works. Equipment was supplied with supporting structures, with all process instrument and utility connections brought to skid edge junction boxes. The units were designed for simple site hook-up and minimum site erection time and costs.