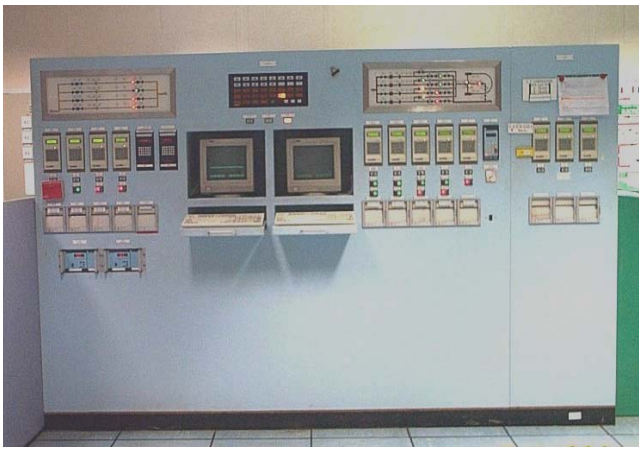
Case Study

Client: BP
Facility: Bruce Production Platform
Location: North Sea
Scope: Metering Computer System Replacement

Overview

The BP Bruce field is located in blocks 9/8a, 9/9a and 9/9b of the UK sector of the North Sea. The field produces both gas and condensate. The gas is exported via the Frigg pipeline and the liquid production is exported via the Forties pipeline.

The Bruce export metering consists of four turbine meter streams for condensate measurement with a shared bi-directional prover and four export gas streams employing orifice flow meters. In addition to the export metering the metering control system provides well test facilities utilising gas, condensate and water measurement from the flowmeters installed on the test separator.



Before

After

Location

In 2003 BP recognised that the metering computer system was rapidly becoming unsupportable with major components becoming obsolete and started a replacement programme. In 2004, SGC were commissioned to provide a replacement system including design, manufacture, installation and commissioning.

From the initial site survey it was evident that many of the internal components of the metering panel were no longer available either. Logically the best solution would have been to provide a complete new metering control panel however two main factors prevented this:

- The logistics of removing the old panel and installing the new panel.
- The platform had no planned shutdowns.

We therefore designed the refurbishment to use a ‘hot change-over’ installation programme.

Stephen Gillespie Consultants Limited
Gateway Business Park • Beancross Road
Grangemouth • Scotland • FK3 8WX

Tel: +44 (0) 1324 486800
Fax: +44 (0) 1324 486799

Email: sales@sgcmetering.com
Web: www.sgcmetering.com

Case Study

Client: BP Group
Facility: Bruce Production Platform
Location: North Sea
Scope: Metering Computer System Replacement

The System

Emerson Floboss S600 flowcomputers were selected and in most cases replaced the existing flowcomputer on a 'one for one' basis. The exception being the test separator where a single flowcomputer was used to provide flow calculations for all three measurement points.

The SGC Meteor (Metering Supervisory Computer) was utilised to provide the primary operator interface and carry out all supervisory and control functions. The Meteor was supplied with two primary nodes operating in a duty/stand-by configuration. In addition a remote workstation was provided for location on the main control room desk.

The multi-functions of Meteor also eliminated the need for many of the front of panel equipment employed in the original system. Pen recorders replaced by the trending facilities, alarm annunciators replaced by the comprehensive alarm and event handling and mimic panels replaced with dynamic computer graphic screens.

The installation programme was completed without incident or accident and without loss of measurement. John Langley of BP wrote, "I'd like to congratulate the team on an excellent performance and a creditable end result on the successful Installation, commissioning and delivery of the Fiscal Metering Upgrade Project. The 35 day project was completed on time, without any HSE incidents The project consistently tracked the allocated project plan timeline and was within 3.95 % of budget. The upgrade enhances the operation of the metering supervisory control and data acquisition on the Bruce platform, bringing the platform closer to integrated technology."

Stephen Gillespie Consultants Limited
Gateway Business Park • Beancross Road
Grangemouth • Scotland • FK3 8WX

Tel: +44 (0) 1324 486800
Fax: +44 (0) 1324 486799

Email: sales@sgcmetering.com
Web: www.sgcmetering.com