

SUCCESS STORY



Yokogawa Completes Automation Replacement at BP Wytch Farm Oilfield

Location: Poole, Dorset, UK
Order Date: April 2006
Completion: August 2008
Industry: Oil & Gas



Executive Summary

Developed by BP, Wytch Farm is Western Europe's largest onshore oil field, and is located in one of the most environmentally sensitive areas of the UK. The total estimated recoverable reserves are 480 million barrels, of which over 90% lie in the Sherwood reservoir, making it the sixth largest in the UK.

The oil gathering operation comprises a central gathering station and a number of remote well sites to the west and south of Poole in Dorset. The site was established in the early 1980s and this project is part of a development plan that will enable the operational life to be extended at least 15 years. Well fluids are recovered to the gathering station for processing and separation. Gas is used to fuel on-site generation and is exported via a 45 km pipeline to a local NGC site. Oil products are exported via a 90 km pipeline to Hamble tank farm and directly from site by road tanker. Recovered water is used for injection at some well sites. Wytch Farm is located in Dorset approximately 28 km from Poole, 10 km from Wareham. The Wytch Farm oil field comprises three separate oil reservoirs that lie under Poole Harbour and Poole Bay in Dorset.

The Challenges and the Solutions

Yokogawa was selected by BP as the main automation contractor (MAC) for the project and the Yokogawa project team worked closely with the BP team during the project implementation. As a project within an operating site, the major challenges were the initial definition of the project scope and requirements in a front-end engineering & design (FEED) study, which included a site survey, document verification, change over planning and interface with existing infrastructure. This was followed by implementation of a smooth hot cutover to the new integrated control and safety system during the commissioning phase. This project replaced the existing Emerson Provox control system, Servelec GEM80-based safety system, Honeywell FSC dual redundant PLC system, Eurotherm process automation controllers, and Transmitton SCADA/RTU previously used to monitor and control the gathering and processing operations. During the FEED phase, the Yokogawa FEED team was resident at the Wytch Farm site for site survey work, liaising with the BP engineers and collecting the engineering data necessary to complete FEED before commencement of the detailed design. A one-team approach by BP and Yokogawa was achieved by managing the business relationship in an open, performance-focused, and collaborative manner with a shared desire to deliver superior long-term value. In addition, a number of lessons were learned during the various phases of the project which were made available to the wider BP community via the global agreement between BP and Yokogawa.

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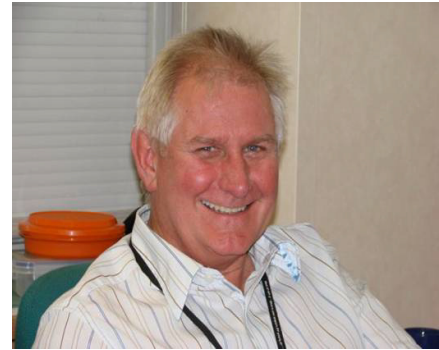
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KNOW

ACT

Customer Satisfaction

Ian Bennett, Project Manager - Automation Excellence, BP Wytch Farm says “Yokogawa worked collaboratively with the on-site BP team through the many challenges of the FEED phase and subsequent design, build & test phases, delivering the system on time. Lessons have been learned, especially associated with the preparation of the loop diagrams and subsequent commissioning phase which will benefit the management & planning of future retrofit projects. We commend Yokogawa for the open and honest way they have accepted responsibility in taking the lessons process forward.” BP confirms its satisfaction in the way Yokogawa has completed the Wytch Farm distributed control system (DCS) and safety instrumented system (SIS) upgrade project.



Ian Bennett
Project Manager Automation Excellence
BP Wytch Farm

Key Project Performance Achievements

- 100% health, safety, security, and environment performance
- No plant shutdown as a result of the project
- Project delivered on time
- Smooth and safe changeover to the new system
- One-team approach with client project team
- High level of customer satisfaction



<System Details>

Integrated control and safety systems: CENTUM CS 3000-Vnet/IP (for DCS), ProSafe-RS (for emergency shutdown/ burner management system [ESD/BMS]), and STARDOM (for remote terminal units [RTU])

Number of DCS I/Os: 4,976

Number of ESD/BMS I/O: 893

Number of RTU I/O: 132

Number of subsystem interfaces: 17

System Information:

DCS: 21 x FCS, 1 x ENGS, 7 x HIS, 1 x PRM,

1 x ExaOPC server for interface

2 x plasma screens (52" HD)

ESD/BMS: 4 x SCS, 1 x SENG

RTU: 6 x STARDOM

Advanced operation assistance: Exapilot, Exaplog