

Brownfield upgrade - Ninian Central Platform

Client:

CNR International (UK) Ltd

Location:

Ninian Central Platform, Block 3/3 - 3/8A CNS

Equipment:

Topside: MCS, TUTU and simulator MCS

Subsea: SCM [Dual A1G SEM] / SCMMB + spare SCM, 500m umbilical + UTA; EFL/HFL assemblies.

Associated Scope:

[2015] Valve Namur sensor module development & qualification by Proserv to overcome obsolescence of the BP SSESV system

The Oil and Gas pipelines are protected by Subsea Emergency Safety Valves (SSESVs) which are controlled by a GEC Avionics control system [built by Brisco Engineering now part of Proserv], supplied in 1990. The current system operates (14) SSESVs owned by CNR International and two (2) SSESVs owned by BP (Magnus and SVT). The system is at the end of its 25 year design life and is no longer supported.

A dedicated BP SSESV actuator control pod for the Sullom Voe pipeline was upgraded by Proserv in 2015; overcoming obsolescence issues associated with it. The requirement on this project was to upgrade the old GEC Avionics SSESV main control system; ensuring reliability and support for this key asset operated by CNR International (UK) Ltd.

Solution

CNR International's requirement was for a single field proven Artemis SCM with internal dual redundant SEMs to replace the existing two (2) off GEC SCMs; thus minimising system complexity. The solution was to provide additional instrumentation such as flowmeters in the hydraulic flow paths so that swept volumes of the SSIV actuators could be recorded to verify 'open' and 'close' status of existing SSIVs; due to uncertainty of existing status indicators.

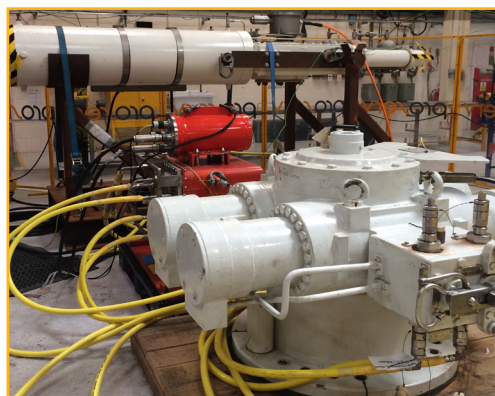
The New Artemis SCM was built to service (14) SSIVs owned by CNR International and two (2) SSIVs owned by BP (Magnus and SVT). Four (4) Spare functions were also provided for contingency and future use. Proserv also provided the main umbilical and topside MCS. Hydraulic

Project Background

The Ninian Central Platform (NCP) is located in the Central North Sea approximately 240 miles North East of Aberdeen and has been on-stream since 1982. Production from the Ninian and surrounding fields is processed by the NCP, prior to transportation via the 36" pipeline to the Sullom Voe processing facility on the UK Shetland islands.



Proserv Artemis SCM/SCMMB



Extended Factory Acceptance Testing Proserv, GY



Proserv simulator MCS

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power was provided from the existing platform HPU.

The Proserv MCS provides redundant power and communications which integrates into the existing Ninian Central Platform DCS system. The existing umbilical suffered from low insulation resistance and this has been addressed by the provision of a new 500m umbilical and UTA, restoring full system redundancy and availability for the life of the system.

To assure relevant system, sub-system functionality and interface compliance, extensive testing was carried out; including an Extended Factory Acceptance Test (EFAT) held at Proserv's base in Great Yarmouth.

Conclusion

Working closely throughout the project life-cycle with the client CNR International has ensured requirements and expectations are clearly understood and managed.

Proserv have delivered a tailored control solution based

upon field proven equipment to assure the upgrade of a critical North Sea asset for continued hydrocarbon production.

Benefits

- Complete system upgrade solution for topside / subsea requirements to meet life of field requirements;
- Field proven technology delivering reliability, enhanced performance and diagnostics;
- Scope included umbilical section replacement to restore system redundancy;
- Reduced system complexity existing GEC SCMs replaced by a single Proserv SCM
- Full integration by MCS into existing topside ESD / PCS systems

