

Operational Safety Assessment of Wire Line Winch

GE Oil & Gas was commissioned to provide a wire line winch for deploying and recovering a Work-Over Control Umbilical located on a submersible. For those using this type of equipment in dangerous offshore conditions, there are numerous potential hazards involved. It was important for GE Oil and Gas to have a third-party opinion on these issues. Consequently, they sought the specialist technical expertise of 4-sight Consulting – a Wilde Analysis subsidiary specialising in Technical Safety services - to provide an Operational Safety Assessment.

Company

GE Oil & Gas was created in 2012, as part of a restructuring of GE Energy, which was formerly a division of General Electric. A global leader in its sector, it provides advanced technology equipment and services for all segments of the oil and gas industry. Its pipeline solutions business inspects more than 104,000 miles of pipeline each year in over 80 countries.

Challenge

The prime objective of the review was to ensure the safety of the operators and the environment in using the winch. This encompassed a study of all the operations that the winch must perform, the winch operating systems and their appropriateness, and a check to ensure those systems were set up correctly and that none were missing.

Finally, the robustness of the systems needed to be assessed, and an assurance provided that sufficient measures had been taken to prevent those systems failing and creating unsafe conditions.

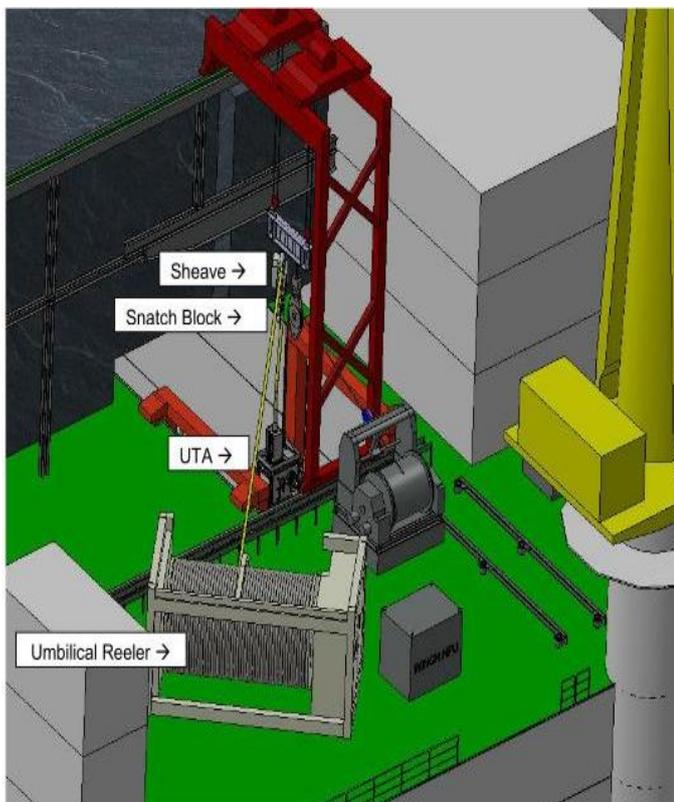


Fig 1: Wire line winch located on a submersible.

“ This project was a new venture for us, and ensuring the safety of the operators using this equipment was our key concern. The combination of clear, precise guidance and specialist technical expertise from 4-sight Consulting enabled us to accomplish everything that we required.

This testimonial is solely intended to demonstrate the experience that GE Oil & Gas had in dealing with 4-sight Consulting, it is not a representation about the product, 4-sight Consulting services or generic capabilities, or any of the aforementioned suitability for any third party's use, or fitness for any particular purpose.

Solution

The first stage of the three-day process involved reviewing the company's existing drawings of the winch, plus its specifications, installation and operating procedures. This was carried out by 4-sight Consulting's crane expert. A review of the Procedure for Failure Modes, Effects and Criticality Analysis (FMECA) undertaken by GE, and a HAZOP workshop then followed. A chairman and scribe were provided by 4-sight for the HAZOP workshop.

“” The review highlighted a number of issues that we hadn't anticipated and, subsequently, these have been proven to be valid. We are keen to protect our company's excellent reputation: the Operational Safety Assessment ensured that we had taken every step necessary to address safety issues and is therefore well worth the cost to us.

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Business Benefits

Based on the detailed reviewing process, 4-sight Consulting were able to provide a clear, precise summary of the issues involved, addressing all the key requirements of GE Oil and Gas and supplying the third-party opinion that was so important for them.

It was 4-sight's conclusion that, once the design issues had been resolved, all the critical actions closed, and the revised deployment procedure had been written and reviewed, in their opinion the wire line winch should be safe to operate.

About Wilde Analysis & 4-sight

Wilde Analysis is an independent full service provider of FEA, CFD, safety & reliability engineering and optimisation solutions, comprising engineering software, multi-disciplined consultancy and training. 4-sight Consulting Ltd is a wholly owned subsidiary of Wilde Analysis Ltd.

Since the acquisition of 4-sight Consulting in 2013, Wilde offers safety assurance and compliance in every phase of the system lifecycle, providing Qualitative and Quantitative Risk Assessment, including independent chairmen for HAZOP and LOPA studies, SIL Assessment and SIL Verification.

With a comprehensive software portfolio, including ReliaSoft, ANSYS, LS-Dyna, Flownex and PLAXIS, Wilde uniquely offers a full suite of simulation technologies to optimise the design of both products and processes for performance, safety and reliability.