



The Customer

Schlumberger - Oilfield Services

Schlumberger is the world's leading provider of technology for reservoir characterisation, drilling, production, and processing to a global energy industry.

The offshore O&G working environment tests the integrity of even the most robust apparatus and is exposed to a great number of weathering factors during each campaign. A regular detailed inspection ensures not only compliance and safety is met, but also that rig up and operations can be completed with minimum disruption.

Engaging 103,000 people representing 170 nationalities with products, sales and services in more than 120 countries, while making more than 30 billioes in revenue, Schlumberger cannot afford to have non-compliant systems or breakdowns that would impact on their campaigns deadlines. Any flaw on its operation could represent significant costs to the company.

With an in-house hazardous-area and electrical certified team ready for mobilisation, our company was ready to support the giant oilfield service provider when they needed us most.



The Context

In order to start any project, Schlumberger must ensure that the operation plant in question is fully compliant with all national and international standards for safety, therefore, a throughout inspection must be carried on before starting a new campaign.

To meet NOPSEMA - The National Offshore Petroleum Safety and Environmental Management Authority - and Woodside Energy - an Australian petroleum exploration and production company - compliance requirements, all electrical equipment to be used in a potentially explosive (Hazardous) area must meet international standards for protection against it creating an ignition source.

Schlumberger required our team's experience and expertise to complete these inspections and ensure all equipment met safety and compliance requirements. As well as completing the Verification Dossier required to make all necessary information readily available for the operator to make sure all apparatus is installed and used correctly.

In this case, the inspections and work to be carried on were extremely time-sensitive as the company could not start the campaigns without being fully compliant.



Safety in the Details

There were a total of 15 remedial repairs completed on site for Schlumberger, including many of Hazardous Areas works.

New high power LED hazardous areas lights installation:

A mock-up on the rig set up, which was simulated prior to dispatch, highlighted that there were some dark spots in working areas around the transportable cabins that could make it unsafe for working at night.

In order to address that issue, our team decided to use LED Floodlights to provide even lighting on the perimeters around the cabins for safe working round the clock. As the cabins are transportable, the lights were also designed to meet Zone 1 Hazardous Area specifications, so the cabins can also be installed in most places on the rig.

For easy installation and demobilisation, we fitted hazardous area connectors to the lights that are easy install reciprocals on a stainless steel mounting system and integrated bash guard, as well as fabricating a sturdy re-usable transport case.

Apart from that, the lights were high-power LED designed of robust construction for longevity. The LED lights also last much longer than fluorescent ones and, therefore, require less maintenance, saving both time and money for the company.



Safety in the Details

Minor repairs to apparatus such as electrical terminations, replacing non-compliant cable glands:

Our team leaves no stone un-turned. General servicing, even cleaning & re-terminating cable connections can be the difference between smooth operations and intermittent readings which can interrupt rig operations in a big way.

It is our priority to provide our clients with efficiency-driven solutions, so they can operate at their highest capacity. The attention to detail is key. An issue that would be very easy to prevent when equipment is in pre-mob inspections, could turn into an unnecessary bigger problem to repair when installed, especially if operations are already underway.

Replacement of bug blower fan blade for non-sparking type:

The smallest details can make a difference between safety and danger. A piece of third-party apparatus was inspected and, although it was electrically well-designed and fabricated with Ex fan motor, enclosure and control gear, our team identified that the actual fan blade was of aluminium construction. After close analysing it, our technicians noticed that the cowling was missing an anti-spark ring used to prevent risk of sparking in case of the fan blade striking the housing.

Our team was able to assist, ensuring a non-sparking anti-static poly blade was installed prior to mobilisation mitigating any potential risk of ignition.



Safety in the Details

Design and fabrication of compact enclosure for wireless gas detection control station and HMI:

Our team goes above and beyond to provide clients with solutions that will make their everyday job more efficient.

During an inspection, one of the client's operators asked whether anything could be done regarding the control station for the wireless gas detection system as space is a valuable commodity on board drill rigs.

The system took up a lot of space in the transportable case in which it had been fabricated, so our team took the challenge to design, fabricate and install a stainless steel smaller, wall-mounted enclosure with the control gear hidden behind the HMI in an IP64 enclosure to solve the problem.

NATA Calibration of portable measuring apparatus such as gas detectors, thermometers, noise meters, thickness testers and others:

Precision is a must when working offshore. Our technicians calibrated multiple appliances in order to meet NATA calibration standards and ensure the that all readings are accurate.

A small job that is crucial in making sure the operators are working with up-to-date and accurate information to assist their decision making process whilst in operations.



Safety in the Details

Other Remedial Repairs.

Some of the other remedial repairs our team have completed include but is not limited to:

- Gas detectors installation;
- Replacement of damaged cables as per OEM design, re-using hazardous area connectors;
- Rectification of non-compliant gasket seal and conductive bolt lubrication;
- Installation of hazardous areas plug and reciprocal for simple operator removal of gas separator HMI screens;
- Replacement of cabin lights, for example: Batten lights damaged compromising IP were both replaced with new ones.



The Results

Out of a total of two large campaign inspections and multiple remedial repairs, the most significant achievement was the completion of all work in a record timeframe.

By simultaneously completing the two large campaign inspections on time, our team was able to ensure Schlumberger could meet equipment mobilisation targets – even with all challenges this type of work provide. As a side benefit, Woodside could also start the campaigns early than first planned.

Another key point was making sure all fault equipment were identified and properly repaired as there weren't any obvious damage. However, haven't they been found and fixed, the company would not meet the compliance requirements which are in place to ensure risks of explosion are mitigated.

The installations of Hazardous-Area lights were another step taken towards safety as it provides adequate lighting for the work space, ensuring every precaution has been taken to make a very dangerous job as safe as possible.

To summarise, we were able to provide our client with the confidence to safely operate, especially in hazardous environments, without risk of harm. Most importantly, the company was satisfied with the results achieved and have already engaged our team in completing two other smaller campaign inspections and other projects.



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