

SENSING DOWN UNDER (LIFE EXTENSION THROUGH SUSBEA MONITORING)

Report on SUT Perth Branch Evening Technical Meeting
Wednesday, 11th June 2014



By Roland Fricke, Perth Branch Committee Member

The evening was opened by SUT Chairman, Ray Farrier and chaired by SUT Committee Member Roland Fricke who is the Subsea & Pipelines Engineering Authority at Woodside Energy.

Presenters were greeted by another packed audience at the Parmelia Hilton Hotel. The continued excellent turnout at the SUT Perth Branch evening technical meetings is testament to the thriving underwater technology community in Perth and the interest generated by the technical subjects being offered by the SUT, notwithstanding the networking opportunities the evenings provide.

Three very interesting presentations were given on emerging technologies for the monitoring and inspection of risers, conductors and subsea equipment.

1) Monitoring of Flexible Pipes - State of the Art (by Robby O'Sullivan, Technip Oceania)

Monitoring of any subsea asset is a technological challenge in its own right and monitoring of a flexible riser is no less challenging.

The presentation focused on a number of existing and emerging technologies being deployed to monitor key characteristics of a flexible riser. This included acoustic emission monitoring of armour wire breakage, curvature monitoring and distributed temperature sensing for annulus flooding.

The presentation explained how these technologies can be used to re-evaluate the "consumed" service life of a riser at any time, thereby providing valuable input to the field management decisions such as replacement philosophy or field life extension.

2) Subsea Integrity - Solutions for monitoring and extending the life of subsea assets (by Brad Tindal, GE Oil & Gas)

With increasing field life for new and existing developments, the requirement from operators to understand the integrity of their subsea equipment also grows, especially for existing installed facilities.

The presentation provided an overview of potential solutions that GE Oil & Gas are working on and developing with operators that can be utilised within Australian waters. This includes subsea leak detection, riser and flowline integrity monitoring, and rotating equipment monitoring. A particular highlight of the presentation was GE's newly developed capability for remote operated underwater digital radiographic inspection of subsea equipment.

3) Secrets of a Healthy and Happy Old Age - Putting Riser Monitoring Data to Good Use (by Hugh Howells, 2H Offshore)

Riser and conductor systems are known to be safety critical components of subsea field developments. Fatigue response of these structures is one of the main drivers for long term integrity.

Whilst motion monitoring has been used for the past 15 years to monitor in-service response of risers and conductors, a key challenge is in how the data is interpreted and applied within an integrity management plan or how it can be used to make operational decisions.

Case studies were presented to provide an overview of monitoring systems used for various types of riser systems to measure fatigue due to wave and currents. It was demonstrated that life extension of riser and conductor systems can be justified by reducing safety factors based on a better understanding of system response gained through structural monitoring.

The evening concluded with the usual drinks and nibbles, thanks to the evening's sponsors: 2H Offshore and Technip Oceania.