

# SUBSEA CONTROLS DOWNUNDER

Report on SUT Perth Branch Conference and Exhibition

16<sup>th</sup> & 17<sup>th</sup> October 2013

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The second in its conference series, 2013's two-day Subsea Controls DownUnder Conference and Exhibition started as all good conferences do - with an Icebreaker. Delegates were welcomed to the beautiful Frasers Restaurant and enjoyed three hours of drinks and never ending canapés whilst enjoying the amazing view of Perth city and the Swan River. A great night was held by all and we are thankful to the Ice Breaker sponsors – FMC Technologies.

Starting first thing the following morning there was a good turnout of attendees from various backgrounds within operators and vendors alike, indicating a high level of interest on subsea controls related issues and in particular for operations within Australian waters.

After Ray Farrier (SUT Perth Branch Chairman) kicked off proceedings, session Chairman, Harry Mackay of Woodside, introduced his colleague Sean Salter who opened up the event with his keynote speech highlighting how from an operators point of view reliability and up-time of controls are critical to subsea operations. The importance of this and how to handle issues that are faced within Australian waters on an ongoing basis to manage and where possible improve on reservoir production set the tone for the conference.

Paul Upjohn of GE Oil & Gas (kind sponsors of Wednesday's morning tea) opened with the first presentation, focusing upon the important subject of obsolescence and how if not managed early and in an effective manner, problems will come along in later field life and cause greater failures to occur. The presentation also highlighted how extending field life with new technology can be applied, enhancing oil recovery for operators by carrying out brownfield upgrades with a variety of solutions available in the market today.

Integrated subsea control systems was the theme for Stefania Narum's – Wood Group Kenny – presentation which investigated different types/levels of partial integration, looking into what options are suitable for applications and how projects within Australia and AP are configured differently and why. This generated healthy debate and comments finishing with a summary of lessons learned from previous projects and the challenges ahead.

MacDermid Offshore Solutions began the post tea break session with Simon McManus providing a review and update on how chemistry within the oil and gas environment has a very important role to play . From Hydrates to high temperature applications and the fluids being used as solutions to operators, Simon gave a thorough overview of ongoing examples where boundaries are being pushed (and met) to accommodate the ever increasing demands of the oil and gas industry today and for the future. For local Australian applications a new calcium wash is being trialed by a few operators that will help in the removal of calcium (coral) and magnesium carbonate from subsea structures.

A long distance visitor from FMC in Norway, Egil Skrivelvik, presented the latest with regards to all electric actuation and controls, looking back at historical advances to where such developments have led to today. Focusing upon the main drivers of FMC's subsea electric actuators plus sharing examples of where such has been used both previously and recently, Egil gave a good overview behind the reasoning why and the benefits of all electric solutions plus an insight into the levels of investment and infrastructure required to be able to manufacture these actuators.

With the lunch break looming Kevin Glanville of Proserv completed the morning session with his presentation on high speed comms and how to achieve and meet the demand that many operators are looking for. Kevin gave examples of how comms can be improved to accommodate new instruments such as sand detectors, multiphase meters, camera's etc by using hub solutions as a cost effective option. In addition to communications the second part of the presentation looked at the use of camera's for video surveillance. An actual camera was present at the conference exhibition and certainly proved how bright the lights were.

For the afternoon Kevin Mullen (Intecsea) kindly offered his services for chairing the session that began with Michael Bell of Technip presenting on the subject of lightweight umbilical solutions for the AP market. As well as giving the audience an insight with regards to the technology used Michael gave an overview of the requirement for lightweight products and how Technip have innovated to meet such challenges. Examples from projects were presented to give the audience a flavor of how such challenges have been met.

The replacement of subsea sensors was the topic presented by Tony Kelly of Emerson Process Management (Roxar Flow Measurement). This presentation identified the challenges faced by operators when sensors fail and a new solution whereby the use of a retrieval system for such sensors is currently being piloted in the Norwegian North Sea. The presentation provided a video clip of a previous test showing the retrieval of a sensor and shared examples of potential costs savings and benefits for operators against the failure of permanent fixed sensors.

With companies in the Australian area looking at possible 'subsea factory' scenarios/opportunities, the next presentation from Ronan Flanagan of Lloyds Register Consulting was of great interest to many advising the audience that the levels of subsea controls would increase and become more complex as time goes on. Reliability, a theme that was continuous through all presentations in the day, was focused upon with Ronan stating the importance of carrying out and acting on reliability management techniques.

Following the afternoon tea break, to keep the audience on their toes, Jens Abrahamsen of Naxys (a GE company) had some 'loud' slides which were examples of Naxys' leak detection and condition monitoring technology. Various audio examples were shared with the 'big bang' compressor tripping really catching peoples awareness if they weren't already paying full attention! Technology previously used to locate submarines now being used for subsea monitoring of subsea systems led to good audience feedback which is what the conference is designed for.

Continuing with the condition monitoring theme, another long travelled presenter, Kaare Finbak of Kongsberg, presented to the audience an insight into their Integrated Environmental Monitoring services and software. A variety of hardware combined with monitoring and decision support software are tools available that can be deployed for various drilling and subsea applications.

Allan Browne of Paradigm Flow Services had the unenviable task of presenting last on the day but captured the audience with a good number of video examples of how their services deal with subsea blockages in pipelines, the typical culprits being of course hydrates, scale, wax and asphaltenes. A very thorough overview of Paradigm's onshore testing and techniques used plus case study examples kept everyone keenly interested, a great achievement for being the last off the rank to present. Many questions followed which then brought the conference to a close for the first day.

The conference dinner, sponsored by Teledyne Oil and Gas, was held at the Parmelia Hilton. It was an intimate choice three course meal where delegates conversed and digested the very entertaining and a high level of technical content that had been displayed throughout the day.

Day two of the conference was kindly chaired by both Mike Theobald (morning) and Harvey Smith (afternoon) from our Platinum sponsors Woodside Energy Ltd.

The day began with an operators perspective on subsea controls integrity, reliability and availability over the life of field presented by Charles Reith of Premier Oil Far East. Charles had previously been involved with the Total Laggan Tormore project within the UK seas West of Shetland and his presentation highlighted a number of challenges faced and using a Production Assurance Programme as a tool to focus upon API-RP-17N Subsea Production System reliability and Technical Risk Management & ISO 20815 Production Assurance and Reliability Management.

Following a late withdrawal from the programme, we were fortunate that Paul Gosset of OneSubsea was able to step in and share the new developments with regards to water detection and redundancy measurement within the Framo Wet Gas Meter, Framo being part of the recently formed OneSubsea Company. Paul shared with the delegates the new technology, two new conductivity probes, that has been adopted and thoroughly tested with the wet gas meter now able to provide water 'salinity' tracking for warning of formation water production plus gaining redundancy within the meter with additional local Water Volume Fraction Measurement.

The early morning session ended with Ross Hendricks of FMC talking about their Condition Performance Monitoring (CPM) for Subsea, a topic that tied in very well with the presentation from Charles Reith as the Total Laggan Tormore project is a good example of where this CPM system is in practice today. Ross presented the benefits to the operator that the CPM system provides backing up with a few case studies from real life applications relating to hydraulic fluid leak detection, router module leakage and multiphase meter integration. This was a very good insight how to highlight early in operations of potential failures that could occur, enabling the operator to plan ahead and save in actual loss of production.

The mid-morning session continued with the strong theme that was appearing from the two days - availability and reliability of subsea controls and how to manage this. Mike Reuss-Newland of Wood Group Kenny discussed with the group two case studies, one on identifying a fault by trending differences in Insulation Resistance. The second case study highlighted an example of hydraulic leak detection, pin pointing the actual fault by trending the pressures over the system, analyzing the data presented to the operator to define the cause.

A different tact was next up with Matthew Stone of GE Oil and Gas giving a presentation on how subsea communications networks are changing, becoming more complex and evolving over time to where we are today, although availability and reliability was still at the forefront of the messages given. Examples of how demand is taking the industry forward with requests for faster and longer distance comms using Ethernet technology were discussed in detail and followed by a number of questions and feedback from the audience.

The last slot before lunch was presented by Eldar Lundanes of FMC on the topic of Long Distance Tiebacks, which followed on well from the previous presentation with regards to reliable comms especially. With demand for longer tiebacks becoming more frequent, communications is a key aspect of such projects and development of this area with knowledge and experience from the telecommunications industry will be required to meet the demands. In addition other 'tools' required for achieving the long distance for items such as power distribution and equipment was discussed along with the challenges that a long tieback gives overall. A good topic to go into lunch with more and more longer tieback projects coming through globally.

Castrol Offshore (kind sponsors of the Thursday afternoon tea) in the shape of Sam Johns started the final afternoon session off, focusing on advanced control fluid and lubrication technologies for challenging subsea applications. While highlighting that subsea applications and operating regimes are continuing to grow. Sam advised that even more so now than before environmental demands are also growing rapidly and that fluid technology companies have to keep up with demand by looking at new and different options to meet with the new challenges. This will lead to companies having to review their system designs which must be addressed now as this change won't happen overnight. On an aside it was noticed that on each of Sam's slides that Castrol are one of the Fifa Football World Cup in Brazil 2014 – I'm sure the request for an odd ticket to this event may cross his path over the next few months!!

Piyush Patel of Kongsberg Oil and Gas Technologies presented a set of slides on the topic of efficient, precise and alternative condition monitoring that kept the flow of the conference going. Piyush focused on alternative methods to that of metering within the industry today, showing the option of virtual flow metering as a solution worth investigating, offering additional features to that of 'physical' meters in the market today. One area, real time production assurance, is an additional tool that can provide the operator with condition monitoring, again aligning with fellow presentations throughout the conference relating to reliability of controls equipment. The video clip shown certainly got people talking especially if you work for a metering supplier, questioning the job longevity lets just say!!

With the final session we had two very good presentations to wrap up the conference. Ben Grant of Nautronix talked the audience through the advances of acoustic technology for subsea networks where improvements to signaling techniques have provided industry with improved accuracy for positioning systems; robustness of telemetry for control and monitoring; reduced interference and greater range capabilities. Current, emerging and future applications of digital acoustics were presented giving an insight how this market is developing and which raised a number of questions as to how this technology will and can be used as time moves on.

To finish we had Kevin Mullen of Intecsea in what is his now famed final slot of the conference – we have only had two of these conferences however Kevin is already renowned for his sly, humorous way of reflecting on our industry and this time was no different! Titled “The Ignominious Shuttle Valve” Kevin shared with us a first-hand example of what he calls his own “shuttle valve experience”, believing that he is not alone in this topic of problems caused by this little device. Up until the final minute before admitting defeat to the client in not being able to identify the cause of the problem the flash of light came and the shuttle valve was finally identified. The talk highlighted the amount of effort, time and various methods used to solve the problem at hand and what then what turned out to be Kevin’s “shuttle valve experience”!!

Following our chairman's closing remarks with thank-you to all the conference committee (present and absent); the sponsors and exhibitors (those mentioned within this report, MacDermid Offshore Solutions and once again, Platinum Sponsors, Woodside Energy Ltd.); the presenters; and of course the delegates , the conference was closed and the audience continued the good networking over drinks provided kindly by sponsors, Proserv, to finish off what was a busy and successful SUT Subsea Downunder Controls Conference for 2013.



*PHOTOS - Top left: Day 1 morning presenters and chairman. Top right: delegates enjoying conference. Middle left: delegates at conference dinner. Middle right: exhibitor within exhibition room. Lower: Day 2 afternoon presenters and chair.*