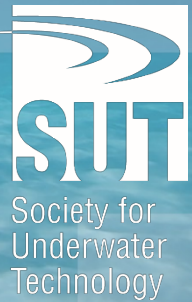


Achieving Reliable Subsea Systems

27 March 2019

Parmelia Hilton
14 Mill Street, Perth 6000

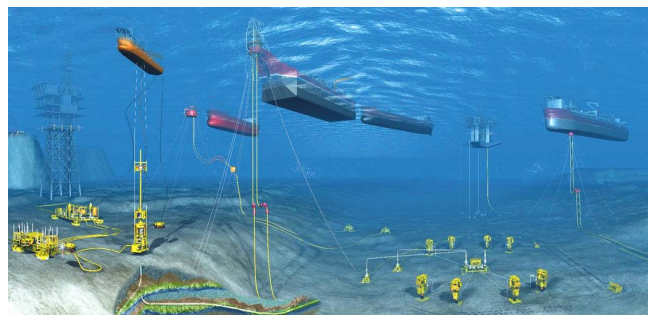
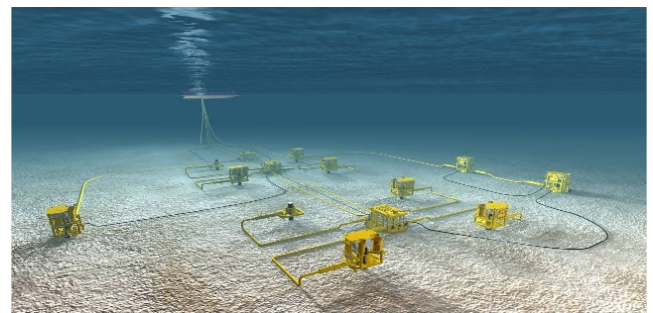
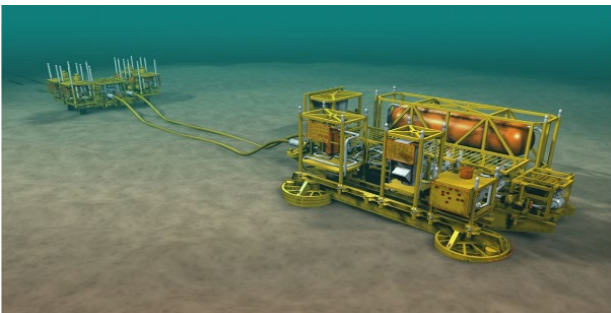


Are you surprised by how often we experience unexpected subsea failures? Are you striving for higher subsea production system reliability? If so, then this is the course for you!

What the Course will Deliver:

- ◆ Overview of Subsea Reliability
- ◆ Framework for achieving reliability targets
- ◆ Interfaces with Subsea Integrity and Project Management
- ◆ Contracting Strategies for Reliability
- ◆ Key Decisions to be made
- ◆ Tools and Methods
- ◆ Industry Best Practice (New codes/stds.)
- ◆ What happens if you get it wrong
- ◆ Economic Benefits of getting it right
- ◆ Turning Lessons Learned into Improvements

Who would benefit from attending this course: Project Managers, Quality/Integrity Personnel, Reliability Specialists, Subsea Systems Engineers, Subsea Discipline/Package Engineers, Subsea Pipeline Engineers, Subsea Operations Personnel, Subsea Equipment Vendors



Pictures courtesy of FMC Technologies Australia

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Society for Underwater Technology – Perth Branch

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PROGRAMME

08.15 Registration

08:25 SUT & delegate introduction

08:30 Welcome, Introduction Reliability Aims and Importance

Alex Ham, Wood Group

- ◆ What do we mean by Subsea Systems Reliability and why is it important?
- ◆ What causes Subsea Unreliability and where do we need to focus?
- ◆ How will this course help you improve Subsea Reliability?

08:50 Framework for Subsea Reliability and Technical Management

Karl Woods, Woodside Energy Ltd.

- ◆ Key terms and definitions
- ◆ Objectives of a reliability strategy
- ◆ Overview of API RP 17N Reliability Management Framework
- ◆ Organisational models to enhance reliability management capability

10:00 Coffee/Tea

10:15 Economics of Reliability and Operability

Ross Hendricks, TechnipFMC

- ◆ Project Failure Statistics
- ◆ Economic Impact of Reliability & Availability
- ◆ Operability—Impact on Production Availability
- ◆ System Design to achieve desired Operability /Availability
- ◆ Impact of System Design - successful & not so successful examples
- ◆ The significance of contracting strategies in achieving reliable cost effective project outcomes

11:30 Reliability Modelling (RAM) / Basic Probability Theory

Keren McFie, BHP

- ◆ Reliability models and how they relate to what we do
- ◆ Some commonly used reliability models
- ◆ Understand how the models work and when they are useful
- ◆ Models outputs
- ◆ What is required to build reliability models
- ◆ What is probability
- ◆ Why you need to know this
- ◆ Standard definitions used in reliability engineering
- ◆ Statistics and distributions to analysis reliability
- ◆ Limitations of calculation—Prediction no Perfection

12:45 Lunch

13:45 Tools and Techniques

Oliver Goodson, Risk Acuity.

- ◆ Reliability Tools and the Design Stages
- ◆ FMEA & FMECAS
- ◆ Event Trees (ETA) - Fault Tree Analysis (FTA)
- ◆ RAPTOR demonstration (useful lessons about modelling Reliability Block Diagrams, Availability and the benefits of Redundancy)

14:30 Workshop

Oliver Goodson, Risk Acuity Pty Ltd.

The class will be given a simple subsea system to actuate a valve. They will be then split into groups, each group will tackle a specific task to analyse using different reliability tools eg. Fault Tree and RBD.

15:15 Coffee/Tea

15:30 Workshop presentations

Oliver Goodson, Risk Acuity Pty Ltd.

16:00 Reality of Reliability

Kevin Gauld, Chevron

- ◆ Data collection, reduction and validity.
- ◆ Systemic failures. Failure when everything is done 'well'
- ◆ Effects of low reliability - examples
- ◆ Inertia of organisations, Hidden benefits of reliability,
- ◆ What is typically achieved, system
- ◆ Design—accommodation of Reality

17:00 Certification and Course Conclusion

SUT reserves the right to change/amend the programme as it see fit.

For further information or to register, please contact Patricia Slapp on p.slapp@sut.org or Tel +61 8 9481 0999.

Registration Fees

SUT Members Early Bird (register & pay on or before 18th Jan)	\$420.00 + GST = \$462.00
SUT Members (registration from 19 th Jan)	\$477.27 + GST = \$525.00
Non Members Early Bird (register & pay on or before 18th Jan)	\$495.45 + GST = \$545.00
Non Members (registration from 19 th Jan)	\$563.64 + GST = \$620.00
SUT Student Member	\$172.73 + GST = \$190.00 – <i>limited places available</i>

Early Bird Registrations must be received by 18 January 2019. Any registrations received AFTER this date will be processed at the standard price.

Fee includes - All refreshments and an electronic copy of the available presentations and videos are provided.
Not included - Hard copy presentations are not provided. Should these be required there is an additional fee of \$60.

Preferred Payment Methods:

Credit Card: Visa, Mastercard or AMEX only *. We cannot accept payment by any other card.

* Payment by Visa or MasterCard will carry a 1.5% surcharge / AMEX will carry a 2.75% surcharge.

Joining Instructions:

Joining instructions will be e-mailed to the registered delegate (as shown on the registration form). All details of presenters and updates to the programme will be included in the joining instructions. Please bring along a laptop to view the presentations.

Transport During the Course:

Delegates are responsible for their own travel arrangements at the beginning and end of each day.

Cancellations: Refunds will be made on written cancellation received up to ten working days prior to the event, but will be subject to a 15% administration charge. Cancellations received 9–4 working days prior to the event will be charged a 50% cancellation fee. Cancellations received 3–0 working days prior to the event will not be refunded. Delegates may wish to nominate a substitute in their place at no charge.

CPD Hours: CPD hours can be claimed for this course, please keep flyer and receipt for auditing purposes.

Please tick box if you do not wish to receive further SUT information

Registration Form

Please e-mail completed form along with delegate profile overleaf to p.slapp@sut.org

Please tick to indicate your preferred payment method: SUT Member No. _____

Credit Card: (Visa, MasterCard or AMEX only)* Invoice: (PO No.) _____

Name _____ Please tick here if personally funding course

Company _____

Address _____

E-mail address _____ Tel No. _____

Credit Card No: VISA, MASTERCARD or AMEX ONLY * _____ / _____ / _____ / _____

Exp. _____ / _____ Security no _____ (3 digit number for Visa & M/C, 4 digit number for Amex)

Name on the card _____

Billing Address if not as above _____

E-mail address where receipt should be sent for credit card payment _____

Amount to be charged \$ _____ Signature _____