

# Achieving Reliable Subsea Systems

## One-day Course

**5 August 2015**

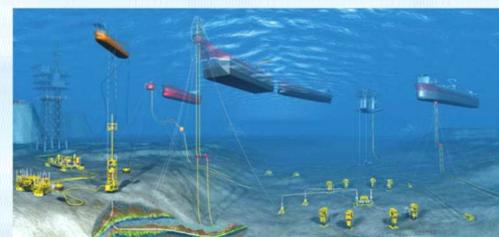
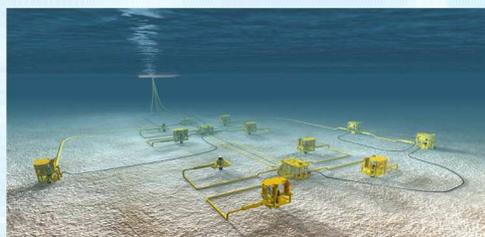
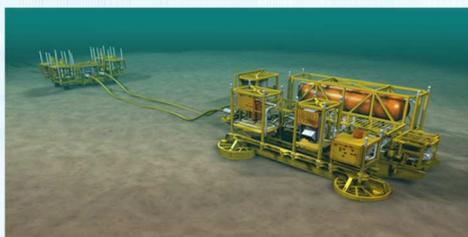
Parmelia Hilton Hotel (Pinnacles Room)  
Mill Street, Perth, Western Australia

**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



# PROGRAMME— Achieving Reliable Subsea Systems

08:00 Registration

08:15 SUT & delegate introduction

08:30 Welcome, Introduction Reliability Aims and Importance

*Alex Ham, Wood Group Kenny*

- ◆ 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, FMC Technologies*

- ◆ 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

*Mark Mackenzie, K2 Technology Pty. Ltd.*

- ◆ 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

12:45 Lunch

13:45 Tools and Techniques

*Iain Moir, Vanguard Solutions Pty Ltd*

- ◆ Reliability Tools and the Design Stages
- ◆ FMEA & FMECAS
- ◆ Event Trees (ETA) - Fault Tree Analysis (FTA)

14:30 Workshop

*Kevin Mullen, INTECSEA & Iain Moir, Vanguard Solutions 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

16:00 Reality of Reliability

*Ewan Rowell, 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.*

Supporting Companies Include:

## Registration Information

Achieving Reliable Subsea Systems Aug 2015

Should you require further information on this event, please contact Jennifer Maninin on [j.maninin@sut.org](mailto:j.maninin@sut.org) Tel +61 8 9446 9903  
To register, either e-mail the information required on the registration form to [perthevents@sut.org](mailto:perthevents@sut.org) or fax the completed form to +61 8 9446 9905

### Registration Fees

**SUT Members Early Bird (register and pay before 8th July)** \$320.00 + GST = \$352 (20% discount)

SUT Members (registration after 8th July) \$400.00 + GST = \$440

**Non Members Early Bird (register and pay before 8th July)** \$360.00 + GST = \$396 (20% discount)

Non Members (registration after 8th July) \$450.00 + GST = \$495

Fee includes - All refreshments, handout notes of the presentations & USB containing PDF versions of the presentations.

### Preferred Payment Methods:

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

**\*Please note if paying by AMEX there will be a 2.75% surcharge.**

**Cheque:** Australian Dollar only, made payable to The Society for Underwater Technology

Send to, SUT, 5/5 Hasler Road, Osborne Park, Perth, WA 6017

Please make sure you reserve a place by e-mail or fax before sending payment.

**Invoice:** Please tick here to be invoiced

### 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.

### Transport During the Course:

Delegates are responsible for their own travel arrangements to and from the Parmelia Hilton Hotel.

**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.

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

## Registration Form

Please e-mail details to [Perthevents@sut.org](mailto:Perthevents@sut.org) or fax the completed form to +61 8 9446 9905

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

Credit Card \_\_\_\_\_ (Visa, MasterCard or AMEX\*) Cheque \_\_\_\_\_ 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 \* \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

Exp. \_\_\_\_\_ / \_\_\_\_\_ Security no \_\_\_\_\_ (last 3 digits on the back of your card)

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 \_\_\_\_\_