

Achieving Reliable Subsea Systems

One-day Course

30th June 2010

Parmelia Hilton Hotel, (Fremantle Room), Mill Street, Perth

**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 (E.g. FMEA/RCA)
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:

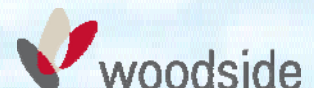
Project Managers
Quality/Integrity Personnel
Reliability Specialists
Subsea Systems Engineers
Subsea Discipline/Package Engineers
Subsea Pipeline Engineers
Subsea Operations Personnel
Subsea Equipment Vendors

PROGRAMME

- 08.15 Registration
- 08.30 **Welcome, Introduction Reliability Aims and Importance**
- ◆ 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?
- 09.00 **Framework for Subsea Reliability and Technical Management**
- ◆ 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 Tea/Coffee
- 10.15 **Reality of Reliability**
- ◆ 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
- 11.15 **Reliability Modelling (RAM) / Basic Probability Theory**
- ◆ 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
- 12.30 Lunch
- 13.00 **Tools and Techniques**
- ◆ Reliability Tools and the Design Stages
 - ◆ FMEA & FMECAS
 - ◆ Event Trees (ETA) ◆ Fault Tree Analysis (FTA)
- 13.45 **Workshop**
- The class will be given a simple subsea system to actuate a valve. They will be then split into 3 groups, each group will tackle a specific task to analyse using different reliability tools eg. Fault Tree, RBD and ETA
- 14.30 **Workshop presentations**
- 14.45 Tea/Coffee
- 15.00 **Economics of Reliability and Operability**
- ◆ 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
- 15.50 **Contracting for Reliability— Workshop**
- In this workshop we will explore the answers to some questions, including:
- ◆ How does Contracting Strategy affect Reliability?
 - ◆ Impact of differing Contracting strategies - eg. Traditional vs EPCM vs Alliancing?
 - ◆ The issues - what we can do about them?
 - ◆ What does the Customer (Operator) want?
 - ◆ What is the ideal Contracting strategy?
 - ◆ Can we provide Contract incentives for Reliability?
- 17.00 **Wrap up / Course Close**

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

Presenting Companies Include:



Registration Information

(Reliability June.10)

Should you require further information on this event, please contact Joyce Bremner on j.bremner@sut.org Tel +61 8 9446 9903
To register, either e-mail the information required on the registration form to perthevents@sut.org
or fax the completed form to +61 8 9446 9905

Registration Fees

SUT Members - \$385.00 Inc. GST

Non Members - \$440.00 Inc. GST

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

Preferred Payment Methods:

Credit Card: Mastercard, Visa, 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, PO Box 7284 Cloisters Square, Perth, WA 6850

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

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.

Cancellations:

Refunds will be made on written cancellation received up to ten working days in advance of the event, but will be subject to a 15% handling charge. 50% will be deducted up to three working days in advance and 100% thereafter up to the start of the event. No refund will be given for non-attendance. Delegates may wish to nominate a substitute in their place.

Transport During the Course:

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

Registration Form

Please e-mail details to Perthevents@sut.org or fax the completed form to +61 8 9446.9905

SUT Member No. _____

Please tick to indicate your preferred payment method:

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

Name _____

Company _____

Address _____

E-mail address _____ Tel No. _____

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

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

Name on the card _____

Billing Address if not as above _____

Amount to be charged \$ _____ Signature _____