

Achieving Reliable Subsea Systems

One-day Course

4th February 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 and Introduction**
Course aims, Reliability history.
- 08.45 **Reliability Aims and Importance**
Reliability at project, system & detailed level.
The impact of failures, Safety, Environment, NPV returns.
The importance of subsea and the cost of failure.
- 09.15 **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
- 10.15 Tea/Coffee
- 10.30 **Basic Probability Theory/ Reliability Modelling**
What is probability?
Quantifying uncertainty through probability
Standard definitions used in reliability engineering
Statistics and distributions to analysis reliability
Why you need to know this.
Reliability Block Diagrams, Reliability quantification
Reliability Availability and Maintainability Analysis
RAM Simulation software packages
Limitations of calculation - Prediction no Perfection
- 11.30 **Tools and Techniques**
System definitions, FMEA;s & FMECSs
Condition to Capacity (Load to strength) distribution
Event Trees, Fault Tree Analysis
Root Cause Analysis
- 12.15 Lunch
- 12.45 **Workshop**
The class will be given a system to actuate underwater valve.
They will be then split into 3 groups, each group will tackle a
specific task to analyse. Ie. FMEA, Fault Tree, RBD
- 13.30 **Workshop presentations**
- 13.45 **Codes and Implementation**
Why QA misses the point
Component Qualification—DNV RP A203, API17Q
Lessons Learnt & continuous improvement looping
Birth of codes NORSOK Z016,API17N, ISO 20815
Reliability Strategy development
Defining functional performance
Changing mindsets and creating responsibility
Organisational Reliability & Human Factors in Corporations
- 14.35 Tea/Coffee
- 14.50 **Economics of Reliability and Operability**
When reliability really matters
When and how reliability is achieved
The Reliability, Availability, Deliverability, Operability linkage
Formal methods of Assuring Operability
Start first time - run at capacity forever concept
- 15.40 **Contracting for Reliability— Workshop**
Specifying reliability & system performance
Contracting for reliability
Rewarding for successfully managing risks
Reliability Strategies for a Contractor/Vendor company
Manufacturing Reliability
FATS, SITs, SRTs are not Reliability Testing
Delivering Re, Av, De, Op over the field life
- .17.00 **Wrap up / Course Close**

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

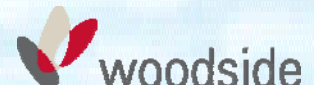
Presenting Companies Include:



ATKINS



Benthonic
Consulting



woodside

Registration Information

(Reliability Feb.10)

Should you require further information on this event, please contact Joyce Bremner on j.bremner@sut.org
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 Melbourne 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 _____

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E-mail address _____ Tel No. _____

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

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Billing Address if not as above _____

Amount to be charged \$ _____ Signature _____