

Subsea Awareness Course

14th – 18th September 2009

Rydges Hotel, (West End One Room),

Corner of King & Hay Streets, Perth, Australia

This five-day Course has been designed to be suitable for contractors, engineers, operators and those new to the offshore industry, those transferring from other disciplines within the industry and those who have worked in subsea previously but would benefit from a refresher course and exposure to the latest technology.

Whilst most of the course will be presented in a 'classroom' environment, the sessions will be interactive, with the opportunity to ask questions and discuss what has been learnt. In particular, hands-on and visual components have been included wherever possible to enable delegates to view software models and products destined for subsea service.

PROGRAMME

Day 1. A.M. 09.00 – 12.30

General Introduction to the Subsea Sector

Overview:

- Why subsea?
- What other options are available, including option evaluation and selection?
- Examples of different systems used on existing fields.
- What are the current design philosophies and the technology drivers?

Subsea development options

- Single well tieback.
- Template.
- Cluster/manifold etc.

Tea/Coffee

Components of subsea systems 'building blocks'

- What is the purpose of each and how do they fit into the overall system?

Development areas:

- Deep water/ultra deep water
- Complete subsea solutions

12.30 *Lunch*

13.30 – 16.45

Flow Assurance

- Understanding the nature of fluids
- Thermal management of subsea systems • Deep and Ultra deepwater development.
- Seabed Processing.

16.45 Day end

18.30 Course Dinner

Day 2 . 09.00 – 17.00

Subsea Wellheads/Trees

Introduction

Getting to know the Technology and Terminology

- Drilling Vessels
- The basics of Drilling a Well
- An overview of Key components and their methods of operation
- Xmas Tree Applications
- Completion risers

Tea/coffee

Wellhead Systems

- UWD-15 Wellhead System Overview
- UWD-15 Wellhead Installation Animation

Tree systems

- HXT and VXT System Overview
- HXT & VXT Installation & Tooling Overview
- HXT Installation Animation
- VXT Installation Animation

12.00 – 13.00 *Lunch*

Templates Manifolds and Connections

Connection Systems

Tea/coffee

2pm Depart Rydges for site visit to FMC's Facility at Henderson

17.00 Back at Rydges
Day end

Day 3 . 09.00 – 16.45

Subsea Control Systems

Introduction.

- Overview, what does the control system do.

Types of Control System

- Advantages/disadvantages of each type.

Tea/coffee

Typical Equipment

- Hydraulic Power Unit, Electrical Power Unit, Master Control Station, Subsea Control Modules.

Subsea Options

- Hydraulics, Electrics, Umbilicals, Sensors.

Operator Interface

- Master Control Station, functionality and options.

Future

- Technology Drivers

12.30 – 13.30 *Lunch*

Subsea Control Fluids

- The control fluid as a component of the system.
- Anatomy of a control fluid.
- Environmental impact.

Tea/coffee

Umbilicals

- Design • Manufacture
- Project Uses

16.45 Day end

Day 4 . A.M. 08.30 – 12.00

Installation

Introduction.

Field Architecture Overview:

- Subsea Tieback • Subsea Floater

Installation Vessels

- Vessel Types • Positioning
- Critical Success Factors

Structures

- Structure Types & Installation
- Foundations, Types & Installation
- Critical Success Factor

Pipelines - Flexibles

- Flexible Types • Critical Success Factors • Installation methods

Pipelines – Rigid

- Flexible Types • Critical Success Factors • Installation methods

Tie Ins

- Rigid Spools • Flexible Jumpers
- Flying leads • Critical Success Factors

12.00 *Lunch*

13.00 – 16.45 **Remote Intervention**

Introduction

- Safety. • Current Environment
- Technology Drivers.
- Water Depth.

Remote Intervention Systems

- Tooling Standards.
- Interfacing.
- Component Replacement systems
- Connection systems.
- Diverless Pipeline Repair.

ROV Technology

- Introduction. • System Types.
- Typical System Components.
- Operational systems and capabilities.
- Launch and Recovery systems.

Tea/coffee

AUV Technology

- Introduction.
- System Components.
- Capabilities. • Sensors
- Trials and Testing.

Diver Intervention

- Air and Saturation Diving • Safety
- Diver Tasks. • Support Vessels.

16.45 Day end.

Day 5. A.M. 09.00 – 12.00

Site Visit to:

Aker Kvaerner's workshop at Belmont.

12.00 *Lunch*

13.00 - 16.30

The Subsea Challenge: hotter, deeper, further, cheaper The e-Field

- Computing and Data Management
- Subsea Visualisation

Harder but Smarter

- High Temperature and Pressure
- Assets in the Abyss.
- Challenges of long distance tie-backs

Tea/Coffee

Risks, Reliability & Availability

- Basic background
- Predictions and Modelling
- Design Techniques
- Practical Reliability

Deliverability & Operability

- Deliverability Concepts
- Practical Operability
- Economics
- Performance
- Specifications
- Reliability Tools

16.30 Course end.

Presenting Companies Include:

 **Aker Solutions**

 **DCF subsea**

 **Technip**

 **Castrol offshore**

 **FMC Technologies**

 **Benthonic Consulting**

 **INTECSEA**
WorleyParsons Group

 **Schlumberger**

 **WOODSIDE**
AUSTRALIAN ENERGY

All details of lecturers and updates to the programme will be provided with the Joining Instructions.



Registration Information

Subseaea Awareness Course

To register, either e-mail the information required on the registration form to perthevents@sut.org

or fax the completed form to +61 (0) 8 9446 9905 Tel: +61 (0) 8 9446 9903

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

Registration Fees

SUT Members \$2500 + GST = A\$ 2750.00

Non Member \$3000 + GST = A\$ 3300.00

Included in the Fees: All refreshments during the Course, including dinner on the first night, and a copy of the Course notes and a DVD containing PDF copies of the presentations and available videos.

Preferred Payment Methods:

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

* Payment by AMEX will attract a 2.75% surcharge.

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

Send to, Post Office Box 7284, Cloisters Square, Perth, WA 6850

Please make sure you reserve a place by e-mail or fax before posting your cheque..

Joining Instructions:

Joining instructions will be e-mailed to the registered delegate (as shown on the registration form). All details of locations, host companies, lecturers and updates to the programme will be included in the joining instructions.

Course Dinner:

An informal dinner will be held in a local restaurant on the first night of the course (details with 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 at the beginning and end of each day. Transport will be arranged by SUT from Rydges Hotel, for the site visits.

Registration Form

Please e-mail details to perthevents@sut.org or fax the completed form to +61 (0) 8 9446 9905

Please tick to indicate your preferred course date and payment method: **SUT Member No.** _____

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

Name _____

Company _____

Address _____

E-mail address _____ Tel No. _____

Credit Card No: VISA or MASTER CARD 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 _____