

# Subsea Awareness Course

20<sup>th</sup> – 24<sup>th</sup> April 2009

Parkroyal Kuala Lumpur,

Jalan sultan Ismail, 50250, KL



This four and half 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.

## PROGRAMME

Day 1: 09.00 – 16.45

### General Introduction to the Subsea Sector

*Presented by: Shell Malaysia*

#### Overview

- Why subsea?
- What other options are available, including option evaluation and election?
- 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

### Overview of Principles of Fluid Flow

*Presented by: Schlumberger*

- Understanding the nature of fluids, thermal management of subsea systems

*Tea/Coffee*

- Deep- and ultra-deepwater development, seabed processing

17.00 Ice Breaker

18.00 Day End

Day 2: 09.00 – 16.45

### Subsea Wellheads/Trees

*Presented by:*

*Cameron Malaysia*

#### 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

- STC - 10 wellhead system overview
- STM - 15 wellhead installation animation

12.30 – 13.30 Lunch

#### Tree Systems

- HXT & VXT system overview
- HXT & VXT installation and tooling overview
- HXT installation animation
- VXT installation animation

*Tea/coffee*

#### Templates Manifolds and Connections

#### Connection Systems

16.45 Day end

Day 3: 09.00 – 16.45

### Subsea Control Systems

*Presented by:*

*Aker Solutions*

#### 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

#### Controls Intervention:

Future Technology drivers

12.30 – 13.30 Lunch

#### Subsea Control Fluids

*Presented by: Castrol Offshore*

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

*Tea/coffee*

#### Umbilicals

*Presented by: DUCO*

- Design • Manufacture • Project Uses

16.45 Day end

Day 4: 09.00 - 16.30

### Installation

*Presented by: Technip Oceania Pty Ltd.*

#### Introduction: Field Architecture

#### Overview

- Subsea tieback • Subsea floater

#### Installation Vessels

- Vessel Types, Positioning, Critical success factors

#### Structures

- Structure types, Foundation types, Foundation installation, Structure Installation, Critical success factor

#### Pipelines - Flexibles

- Flexible Types, Critical success Factors, Installation methods

#### Pipelines - Rigid

- Rigid types, Critical success factors, Installation methods

#### Tie Ins

- Rigid spools, Flexible jumpers, Flying leads, Critical success factors

12.30 - 13.30 Lunch

#### Remote Intervention

*Presented by: Fugro Survey Pte Ltd.*

#### Introduction

- Safety, current environment, technology drivers, water depth

#### ROV Technology

- Introduction, system types
- Typical system components
- Operational systems & capabilities, launch & recovery systems

*Tea/coffee*

#### AUV Technology

- Introduction, system components, capabilities, sensors, trials & testing

#### Systems

- Tooling standards, interfacing, component replacement systems
- Connection systems, diverless pipeline repair

16.30 Day end

Day 5: 08.00

### Depart Parkroyal Hotel for Site Visit to Aker Solutions Port Klang

From drawing board to reality: you will see the high-tech equipment used to manufacture components for control of subsea wells & trees. You will also have the opportunity to view the hardware components used for subsea architecture.

12.45 Arrive back at Parkroyal Hotel Course Conclusion



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



## Registration Information – Subsea Awareness Course - Kuala Lumpur

(Apr 09)

To register, either e-mail the information required on the registration form to J.Bremner@sut.org or fax the completed form to Joyce Bremner on +61 8 9204 3826 Tel. +61 8 9204 3826

### Registration Fees

SUT Members MYR 7500.00

Non Member MYR 8200.00

Please note that all payments will be charged in British Pound Sterling, an exchange rate of 6.00 MYR to £1 will be used

*Included in the Fees:* All refreshments during the Course, transport to and from Aker Solutions, a copy of the Course notes in handout format and DVD containing PDF versions of the presentations.

### Preferred Payment Methods:

**Credit Card:** Mastercard or Visa ONLY. We cannot accept payment by other cards.

**Invoice:** full details must be supplied ie. Po no. address to which the invoice should be sent.

Bank Transfer: (exclusive of transfer fees and currency exchange rates) to

Barclays Bank Limited, Pall Mall Business Centre, London, SW1Y 5AX

Account no. 80849499 Sort Code 20 65 82 Account name: Society for Underwater Technology

### 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.

### Site Visit:

All costs for the site visit are included in the registration fee, transport will be arranged by the SUT.

### 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 Parkroyal Hotel Kuala Lumpur. Transport will be provided to and from AkerSolutions for the site visit on the Friday.

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

---

---

## Registration Form

Please e-mail details to **J.Bremner@sut.org** or fax the completed form to +61 8 9204 3826

SUT Member No. \_\_\_\_\_

Please tick to indicate your preferred payment method:

Credit Card \_\_\_\_\_ (Visa or MasterCard) Invoice (PO No.) \_\_\_\_\_

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

E-mail address \_\_\_\_\_ Tel No. \_\_\_\_\_

Credit Card No: VISA or MASTERCARD 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 \_\_\_\_\_