

Subsea Awareness Course

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

Overview of Principles of Fluid Flow

- 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 – 16.45 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

- MS 700 Wellhead System Overview
- MS 700 Wellhead Installation Animation

12.30 – 13.30 *Lunch*

Tree systems

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

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. 08.30 – 12.30 Site Visits to:

**Vetco Australia Pty Ltd.
workshop at Malaga**

&

**Aker Kvaerner's
workshop at Belmont.**

12.30 *Lunch*

13.30 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 KVÆRNER™

DCFsubsea

INPEX
INPEX BROUSE, LTD.



offshore
Gastrol

OCEANEERING
MULTIFLEX

Schlumberger

Technip

vetcogray
a GE Oil & Gas business

WOODSIDE
AUSTRALIAN ENERGY

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

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