Subsea & Marine Design, Operation and Maintenance

INTRODUCTION

- This interactive, applications-driven 5-day Subsea & Marine Design, Operation and Maintenance training seminar offers a professional approach providing access to decision making support tools in asset management-operations decision making. It will show how the use of big data analytics can support strategic initiatives; to inform on asset management data information; and to direct subsea & marine operational decision making.
- This training course is aimed at addressing a global industry “age gap” by providing a link to a knowledge management based pool of highly experienced professionals and leaders across the Offshore & Marine - Subsea Operational and Technology sectors.
- The industry is going through a period of a combination of tightening international asset maintenance standards, and the cyclic challenges presented by a global industry where oil and gas price volatility is pushing down operating entities and contractor-service providers profit margins, and having to deal with issues associated with ageing assets are forcing oil and gas operators to assess their existing strategies and develop something more robust such that one maximises the Return-On-Investment (ROI) budget levels.
- Something that inevitable falls out of these periodic downturns is experienced personnel leave the industry, thus providing a significant gap in the available skills, and management leadership.
- Alongside this, asset integrity has become far wider and more diverse; with modern day asset integrity managers becoming responsible for a wider remit of roles whilst still being expected to fulfill their traditional activities.
- So this Subsea & Marine Design, Operation and Maintenance training course will better prepare you as an aspiring subsea or marine operations engineer for both the interesting and challenging journey and career of becoming the Lead Operations owner operator engineer or possibly a Asset Manager; These roles will involve more subsea infrastructure installations by way of long subsea tie-backs to shore or subsea – marine offshore facilities involving a Floating Production Storage and Offloading (FPSO) or possibly a Floating Liquefied Natural Gas (FLNG) or Floating Re-Gasification Storage Unit (FSRU) facilities in the development and extraction of numerous stranded Oil & Gas gas fields by re-deployable mobile assets.

This training course will feature:

- Discussions on the latest subsea inspection technologies and operational maintenance recommended best practices
- Developing your knowledge of subsea system engineering
- Covering asset and integration management
- Sessions on building your Operational Knowledge and Team Leadership skill sets
- Providing a wide overview of how the Offshore Subsea + Marine Technology sector is evolving and still developing technology that can save on both Capital Expenditure (CAPEX) + Operating Expenditure (OPEX) costs
- Interfaces Onboard FPSO or FLNG Facilities
- Operation and maintenance of FPSO and FLNG

OBJECTIVES

By the end of this training course, participants will be able to:

- Have the tools and awareness to make quality and timely decisions
- Explain the scope and structure of what it takes to become an Operations or Asset Manager
- Improve your knowledge and understanding across subsea + marine Life of Field operations management recommended best practices, regulatory reporting regimes
- Improve your knowledge on topside facilities such as FPSO and FLNG

TRAINING METHODOLOGY

- This Subsea & Marine Design, Operation and Maintenance training course will utilise a variety of proven adult learning techniques to ensure maximum understanding, comprehension and retention of the information presented:
- PowerPoint presentations, operational video's, training manuals with practical user examples. Competency assurance tests, continuous professional development measures
- The daily seminars will be highly interactive and participative. This involves regular discussion of applications as well as hands-on exposure to techniques using examples from the offshore work place environment. Delegates are strongly encouraged to bring and share their own experiences, lessons learnt from the work domain. This adds greater relevancy to the content. Emphasis is also placed on building industry knowledge sharing and skills transfer to the next generation.

WHO SHOULD ATTEND?

This training course is suitable to a wide range of professionals but will greatly benefit:

- New Graduates and Professionals in both operations and onshore to offshore asset management support roles with 3 to 4 years and 10+ years of experience respectively
- Reliability or Operations-Maintenance Engineers, Field Supervisors Those who seek to derive greater decision making value and develop their experience and subsea-marine operations knowledge

Course Outline

Setting the Scene in Operational and Life Cycle Asset Management

- Introduction: The Life of a Subsea or Marine Operations Engineer, Supervisor or Asset Manager
- Overview of Subsea Engineering
- Subsea Field Development
- Subsea Production Systems
- Subsea Structures and Equipment
- Subsea Field Development Overview
- Project Execution and Interfaces
- Managing Teams of Multi-disciplined Personnel
- Project Team Roles and Responsibilities
- Subsea Asset Integrity Framework for Project Execution

Subsea Installation and Operations from Commissioning a Subsea Well System to Developing Operational Subsea Inspection and Maintenance Budgets for Offshore Assets

- Subsea Surveying
- Subsea Soil Investigation
- Subsea Foundation
- Subsea Pipeline Installation
- Typical Installation Vessels
- Vessel Requirements and Selection
- Subsea Cost Estimation (cost methodologies, equipment costs, installation costs)
- Case Study: Subsea System CAPEX Estimation
- Subsea Simulator Facility
- Intelligent Wells with Subsea Data Communication Hubs and Programmed Autonomous Underwater Vehicle (AUV)

Subsea Architecture and Topside Surface and Subsea System Engineering

- Interfaces Onboard FPSO or FLNG Facility
- FPSO and FLNG Topside Facilities and Layout
- Flow Assurance
- System Design and Operability
- Subsea Power Supply
- Riser / Controls Umbilical
- Subsea Control
- Subsea Manifolds
- Pipeline Ends and In-Line
- Structures
- Subsea Connections and Jumpers

Operability, Planning Period Subsea, Marine Facility Inspections, Maintenance and Repair Asset Integrity

- Risk Assessment
- Maintaining a Stable Integrity Performance for Your Assets – Managing the Risks over Life of Field
- Environmental Impact Assessment
- Project Risk Management
- Subsea Equipment RBI Methodology
- Pipeline RBI
- Remote Operated Vehicles (ROV) Intervention and Interface
- Inspection and Maintenance of Subsea Systems
- Subsea Pipeline Repair Methods
- Risk and Reliability Analysis
- Emergency Shutdown

Offshore Operations Onboard a FPSO and or FLNG Production Asset

- Introduction to FPSO –FLNG Operation and Maintenance
- FPSO and FLNG Inspection and Maintenance
- Regulations and Codes
- Environmental Influences Affecting FPSO – FLNG Operations
- FPSO and or FLNG Mooring, Turret and Swivel Operations
- Subsea Umbilicals, Risers + Flowlines (SURF) and Subsea Facility Interfaces
- Oil or Gas Transfer (Offloading) - Examples in both FPSO + LNG Carrier Tandem Mooring to FLNG Assets, using Cryogenic Hoses
- Summary of Key Learning and How these fit into your continuous professional development training and competence measurement profile, Leadership + Management Skills Retention