Leaders Development Institute

Certified Courses

Managing Offshore Field Development & Marine Asset

INTRODUCTION

- Offshore field development involves planning the field development, design engineering, construction, start-up and production operations. When planned and executed with marine assets, such offshore field development projects will be technically and commercially challenging. Therefore a good knowledge and competency of the project team members throughout the different phases of the field development are keys to the successful execution of such developments.
- This 5-day Managing Offshore Field Development & Marine Asset training seminar aims to provide the participants with comprehensive foundation knowledge of offshore field development and offshore engineering. The training seminar starts with an introduction to Field Development Planning (FDP) and project management, followed by design engineering, procurement, substructures and topsides fabrication, load-out and sea transportation, offshore installation, hook-up, commissioning, and start-up. An overview of the major and support marine vessels, cranes and pipe-laying equipment will also be described.
- This training seminar places particular emphasis on the principles and best practices, flowcharts and diagrams to enhance the learning experience of the participants. Relevant international and typical client engineering standards will be referred to. Rules of thumb, engineering formulas, flowcharts and diagrams will be used to illustrate the principles and steps required for each part of the work. Real-life project examples as well as video clips will be used to demonstrate these offshore engineering activities and to aid the familiarisation and learning of the participants.
- With a good foundation knowledge of offshore field development, marine assets and offshore engineering, it is hoped that the participants will be better prepared to function in the feed and design engineering, fabrication and construction department, offshore installation, hook-up, commissioning and start-up of offshore projects. Such roles include field and discipline engineers, project engineer, cost estimating engineers, fabrication contract admin executives, CSR, construction supervisors and engineers, or fabrication engineer.

This training seminar will feature:

- Overview of Field Development Planning (FDP) and Project Management
- Design engineering process, deliverables and flowchart
- Fabrication techniques such as cutting and welding, blasting and painting
- Erection and assembly techniques, including cranes and lifting techniques
- Load-out techniques, preparations and ballasting
- Sea-fastening engineering and implementation
- Structure and topsides installation techniques
- Pipelaying and riser installation activities
- Subsea installation and diving support activities
- Hook-up workpack process and execution
- Hook-up activities for each engineering discipline
- Commissioning activities, start-up and handover to client

OBJECTIVES

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

- Understand What entails in Field Development Planning (FDP) and Project Management
- Understand the Complexities of Managing Offshore Field Development & Marine Asset
- Understand Fabrication, Erection, Load-out and Sea-fastening Implementation at Fabrication Yards
- Understand the selection of the major support marine vessels and major installation equipment for offshore installation works
- Fully understand the structure and topsides installation techniques
- Understand what is involved in Pipe laying and riser installation works & Subsea installation and diving support activities
- Fully understand what are involved in mobilisation of marine vessels, construction crew, marine crew and construction equipment
- Understand the scope of work for hook-up and commissioning activities

TRAINING METHODOLOGY

- This Managing Offshore Field Development & Marine Asset training seminar will be conducted in a classroom. Examples and video clips of past offshore fabrication and load-out activities, as well as offshore installation activities will be used to aid the learning and understanding of the subject matters. Participants will also take part in group classroom exercises to reinforce their learning experience. Each participant will receive a set of training seminar materials. There will also be pre-seminar as well as post-seminar assessment tests.

WHO SHOULD ATTEND?

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

- Asset Managers
- Field Engineers, CSRs, Construction Supervisors, Project Engineers
- Operations Engineers
- Workpack Engineers
- Structural Engineers
- Metocean Engineers
- Pipeline Discipline Engineers
- Subsea Equipment Engineers
- Various Discipline Engineers (structural, piping, equipment, electrical, instrumentation)
- Maintenance Engineers
- Contract Admin, Buyers and Procurement Executives
- Cost Estimating, Project Control and Planning Engineers
- Diving and Diving Support Personnel
- Managers and Executives who are new to Offshore engineering projects
- Other Engineers and Technicians who need to update their current Oil and Gas industry experience and wanting to move to Offshore Field development Projects
- University engineering lecturers who wish to be CPD-certified by Institution of Engineers (IEM) at their respective countries

Course Outline

- Pre-course Assessment Test
- Course Learning Objectives vs. Course Participants' Expectations
- Field Development Planning (FDP), Project Management and Design Engineering
- Overview of Field Development Planning (FDP)
- Project Management Team (PMT), Roles and Responsibilities
- Contracting, Subcontracting and Procurement Activities
- Design Engineering Process Deliverables and Flowchart
- Health, Safety, Environment and Security Requirements, including training requirements and qualification of personnel
- QAQC Requirements, Documentation and Drawing Controls
- Fabrication and Onshore Construction
- Fabrication Yard Layout, Load-out Methods, Workshops and Major Equipment Types, Foundation Preparation and Preliminary Works
- Planning and Scheduling, Fabrication Cost-Time-Resource (CTR) Estimating
- Fabrication, Erection and Assembly of Major Structures, Substructures, Topsides and Living Quarters
- Pipeline Procurement, Concrete Coatings, Pipeline Load-out and Transportation
- Welding and Welder Qualifications
- Blasting and Painting Activities, Testing and Inspection Requirements
- Typical Manpower and Fabrication Equipment Planning and Management
- Skid and Packaged Equipment Procurement, Factory Acceptance Testing (FAT), Delivery, Storage, Preservation, Installation
- Weight Control and Weighing of Structures in Fabrication

- Yard Pre-commissioning Activities
- Jacket Modules Commissioning, Trial Fitting and Ship Loose Items Management
- Load-out Activities
- Pile and Conductors Make-up and Fabrication, Transportation Arrangement and Load-out
- Load-out Planning, Engineering for Substructures and Topside
- load-out Execution, Ballasting Techniques and Calculation
- Insurances, Commercial and Warranty Surveys
- Emergency Response Procedure (ERP)
- Offshore Facilities, Pipelaying and Subsea Installation
- Offshore Transportation and Installation Phases, including Planning and Scheduling
- Geotechnical and Geomatics Surveys
- Anchor-pattern Preparation and Approval
- Offshore Installation Considerations, Engineering and Calculations
- Weight Control and Onshore Weighing Reports of Structures
- Transportation Analysis and Sea-fastening
- Launching, Lifting and Installation of Substructures
- Substructures Launching, Lifting, Self-installation & Novel Methods
- On-bottom Stability, Pile and Conductor Make-up, Piling and Grouting of Substructures
- Lifting Analysis of Topsides and Modular Topsides Construction
- Float Over of Integrated Topside Deck
- Topsides Installation - modular lifts, float-over and novel methods
- SIMOPS considerations for Offshore Installations
- Pipeline and Riser Installation
- Reel Pipelines and Umbilicals Laying
- Subsea Equipment Installation and Diving Support Activities
- Marine Vessels and Offshore Equipment
- Vessels Availability, Contracting and Procurement Activities and Considerations
- Major and Support Marine Vessels, Major Equipment Types for Offshore Installation, Hook-up and Major Maintenance
- Onshore Supply Base and Load-out Activities
- Logistics Support Activities
- Cost-Time-Resource (CTR) Estimating for Transportation and Installation
- Mobilisation Preparations
- IPOP and Pre-execution Reviews
- Insurances, Commercial and Warranty Surveys
- Metocean Activities and Installation Window Considerations
- Insurances, Commercial and Warranty Surveys
- Maintenance Issues and Considerations of Marine Assets
- Hook-up Construction and Commissioning (HuCC)
- HuCC Planning and Scheduling, Monitoring and Reporting
- Workpack Process and Execution
- Procurement - Cost-plus and Overheads
- Construction and Marine Crew Manpower Recruitment and Mobilisation
- Onshore Minor Fabrication
- Mobilisation of Construction Crew, Equipment and Marine Vessels
- Inspection of Construction Equipment and Marine Vessels
- Overview of Marine Operations
- Hook-up Activities, namely, blasting and painting, cutting, fitting and welding, piping and piping supports, platform appurtenances, E&I works

- Pre-commissioning Activities
- Hydrotesting, NDT and Inspection Activities
- Commissioning Activities and Dossiers
- Start-up, Operations, Handover, Project Closeout
- Start-up (first oil, first gas) Production
- Documentation for the Project
- Hand-over to Operations Team
- Punch-list Items
- Post-project Activities, Final Documentation
- Change-order and Variation Orders
- Lesson learnt Database and Dissemination
- Course Summary
- Post-course Assessment Test

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