

1 DAY FUNDAMENTALS OF FPSO / FLOATING PRODUCTION TECHNOLOGY

09.00 Welcome

09.15 LECTURE L1 - INTRODUCTION TO FPSO / FLOATING PRODUCTION SYSTEMS

- Background and General Trends in Offshore Production
- Review of Fields developed with Floaters and Subsea Production Systems
- Influence of Pressure, Temperature and Field Chemistry on Production System.
- Geographic Requirements
- Typical FPSO Field Development Contracts

09.45 LECTURE L2 - FLOATING PRODUCTION HOST REQUIREMENTS

- Functional Requirements
- Monohull, Semi-Submersible, Deep Draught Semi-Sub, SPAR and TLP Options
- Layout and Safety
- Newbuild or Conversion
- New Developments (Sevan)

10.45 Break

11.00 LECTURE L3 - FPSO MONOHULL DESIGN REQUIREMENTS & TESTING WITH MODELS

- Design Requirements.
- Hydrodynamic Studies
- Wave Tank Model Testing.
- Wind Tunnel Testing.
- Computational Fluid Dynamics (CFD)
- Response Amplitude Operators (RAO)
- FPSO Motions and Current Forces
- Operational Studies.

11.30 LECTURE L4 - SUBSEA PRODUCTION FOR FPSOs

- Main building blocks :-
- Well Completions and Xmas Trees,
- Manifolds and Templates,
- Flowlines and Pipelines
- Risers
- Subsea Control Systems.
- Umbilicals.

12.30 Lunch

13.30 LECTURE L5 - FPSO MOORING / RISER SYSTEMS & TURRET DESIGN

- Typical Systems
- Components

- Analysis / Design & Safety Factors
- Materials
- Anchors & Piles
- Installation
- FPSO Layout (External & Internal Turrets)
- Turret Size vs Capacity
- Disconnectable Systems
- FPSO Risers
- Mooring Lines and Riser Connections and Handling
- Fluid Transfer Systems – Swivels

14.15 LECTURE L6 - INTRODUCTION TO FPSO TOPSIDES PROCESSING SYSTEMS

- Function of process and utility plant (Reservoir Interaction, Typical Reservoir Fluids, Product Specifications, Environmental Constraints)
- Processing Facilities (Separation, Compression, Produced Water, Water Injection, Utilities)
- * Effect of Motion,
- Process Equipment Examples.

15.00 Break

15.15 LECTURE L7 - SHUTTLE OR TRADING TANKERS AND EXPORT OPTIONS

- Types of Tankers (Shuttle Tankers with DP Thrusters, Standard Trading Tankers, Capacities)
- Loading/Offloading Rates
- Operational Schedules
- Offloading Transfer Systems (Direct or Remote)
- Metering Systems
- Safety Records

16.00 LECTURE L8 - FPSO SAFETY AND RISK MANAGEMENT

Offshore Safety Incidents

- Safety Case Regulations
- * Design and Safety Assessment for Floating Installations
- Certification/Verification/Classification
- Discussion with Examples
- Environmental Issues

16.45 Q & As

17.00 Close of Course