CONCEPT

FPSO and FLNG Operations and Maintenance: Turret, Offloading and Hull Integrity

3 – 7 October 2027
Jeddah - Corniche four-star



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Introduction:

FPSO and FLNG operations and maintenance decide whether a floating unit keeps producing through weather, motion and ageing steel. Crews handle weathervaning turrets, swivel leaks, cargo tank inerting, shuttle tanker offloading and hull corrosion on a deck that never stops moving, while class surveys and production targets compete for the same shutdown windows. This Core Concept course trains offshore operations, maintenance, marine and integrity staff to run and maintain topsides, turret, marine and cargo systems and to plan inspections. Participants produce an FPSO Operations and Maintenance Readiness Plan for a case unit.

Course Objectives:

- Map the operating envelope of an FPSO or FLNG unit from start-up and producing life to late-life turnaround, including shutdown and restart sequences
- Operate topsides separation, gas compression and produced water trains while compensating for vessel pitch, roll and heave
- Control turret, swivel stack, mooring line and riser interfaces through routine checks, leak detection and tension monitoring
- Run cargo tank, inert gas, ballast and crude offloading operations in tandem and side-by-side configurations within hose and hawser limits
- Plan risk-based maintenance, hazardous-area electrical checks and class survey scopes that protect hull integrity and uptime
- Produce an FPSO Operations and Maintenance Readiness Plan that assigns inspection intervals, spares, emergency drills and crew responsibilities

Target Audience:

- Control room and topsides process staff who run separation, compression and water treatment trains on floating units
- Marine crew responsible for ballast, cargo tank inerting, station keeping and offloading operations
- Mechanical, electrical and instrument maintenance staff who keep rotating equipment, generators and hazardous-area equipment in service
- Hull, mooring and riser integrity staff who inspect steel, coatings, chains and flexible risers
- Offshore shift supervisors who coordinate permits, shutdowns and emergency response on board

Course Outline:

Day 1: Floating Production Units and Life-of-Field Operation

- FPSO, FSO and FLNG Unit Types and Their Operating Envelopes
- Life-of-Field Phases: Hook-Up, Start-Up, Plateau and Late-Life Turnaround
- Offshore Organisation Chart: Offshore Installation Manager, Marine and Process Roles
- Operating Integrity Baseline: Uptime, Deferment and Flaring Metrics
- Unit Readiness Gap Assessment Checklist

Day 2: Topsides Process, Turret, Swivel and Riser Interfaces

- Separator Level Control and Sloshing Allowance Under Pitch, Roll and Heave
- Gas Compression, Dehydration and Produced Water Trains on a Moving Deck
- Internal, External and Disconnectable Turret Arrangements with Bearing Care
- Fluid and Electrical Swivel Stack Seal Monitoring and Leak Response
- Lazy-S Flexible Riser, Bend Stiffener and Pipeline End Manifold Checks

Day 3: Cargo Handling, Offloading and Marine Utilities

- Cargo Tank Management: Ullage, Heating, Crude Washing and Settling
- Inert Gas Generation and Tank Oxygen Control Below the Flammable Range
- Tandem and Side-by-Side Offloading: Hawser, Hose String and Shuttle Tanker Approach
- Ballast Water Transfers, Trim, List and Hull Stress Monitoring
- Main Power Generation, Load Shedding and Emergency Generator Tests

Day 4: Maintenance Strategy, Hull Integrity and FLNG Challenges

- Reliability-Centred Maintenance and Risk-Based Inspection for Topsides Equipment
- Class Survey Cycles, In-Water Survey and Continuous Hull Survey Planning
- Hull Corrosion, Coating Breakdown, Fatigue Cracks and Mooring Chain Wear
- Hazardous-Area Electrical and Instrument Inspection with Ignition Source Control
- FLNG Compact Liquefaction Trains, LNG Tank Sloshing and Cryogenic Hose Transfer

Day 5: Inspection Walkthrough: FPSO Operations and Maintenance Readiness Plan

- Case Unit Walkthrough: Turret, Cargo Deck and Machinery Space Findings Log
- Offshore Emergency Response Drills: Gas Release, Fire, Loss of Station Keeping
- Critical Spares, Inspection Interval and Shutdown Window Schedule
- Readiness Plan Drafting: Roles, Permits, Inspection Programme and KPIs
- Peer Review of Readiness Plans Against the Walkthrough Findings

Skills You Will Gain:

- Floating Unit Process Control
- Turret and Swivel Surveillance
- Cargo Tank Inerting
- Tandem Offloading Coordination
- Mooring and Riser Integrity
- Hull Corrosion Assessment
- Hazardous-Area Equipment Inspection
- Offshore Emergency Drill Planning

Why Attend This Course:

- Return with an FPSO Operations and Maintenance Readiness Plan built on a case unit walkthrough and ready to adapt to your own vessel
- Spot swivel seal leaks, chain wear and coating breakdown before they force an unplanned shutdown
- Coordinate offloading, ballast and inerting steps with marine and process colleagues using one shared sequence
- Compare turret, cargo and maintenance practice with operations and integrity peers from different floating production fleets

Conclusion:

Reliable floating production depends on crews who understand how motion, marine systems and process plant interact. The week moves from unit types and life-of-field phases, through topsides, turret, swivel and riser interfaces, to cargo handling, inerting, offloading and power, then to maintenance strategy, class surveys, hull integrity and the extra demands of FLNG. The final day applies each step to a case unit, and every participant completes an FPSO Operations and Maintenance Readiness Plan ready for review with their offshore team.