

Advanced FLNG Technology and Integrated Operations Training Course

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Overview

Advanced FLNG Technology and Integrated Operations Training Course is a one-week course for FLNG process, marine, operations, maintenance, HSE, and assurance personnel who leave with an FLNG Integrated Operations and Assurance File. Participants connect feed-gas treatment, liquefaction, storage, marine systems, offloading, utilities, controls, reliability, and emergency coordination across topsides-hull interfaces. The course resolves fragmented operating decisions through system mapping, operating envelopes, interface controls, and scenario practice. Agile Leaders Training Center presents advanced FLNG integrated operations.

Who Should Attend

- Process and production functions responsible for gas treatment, liquefaction, refrigeration, and production optimization
- Marine and cargo functions responsible for station keeping, storage, offloading, and transfer coordination
- Operations functions responsible for start-up, shutdown, control-room response, and shift handover
- Maintenance and reliability functions responsible for equipment strategy, availability, and defect prioritization
- HSE and assurance functions responsible for barriers, SIMOPS, emergency coordination, and integrity evidence

The course assumes participants already work with LNG or offshore process systems, and it leaves out LNG finance, trading, land-based fueling stations, and basic terminal design.

Departments and Industries

The course supports departments and industries that operate or assure floating gas-processing and marine production assets.

- Offshore oil and gas production and floating production facilities
- LNG production, liquefaction, storage, and export operations
- Marine operations, cargo transfer, and vessel-interface coordination
- Process engineering, automation, utilities, and technical assurance
- Maintenance, reliability, asset integrity, and emergency management

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Learning Objectives

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

- Analyze integrated FLNG process and marine system interactions
- Apply operating envelopes to liquefaction, storage, and utilities
- Build controls for SIMOPS and topsides-hull interfaces
- Diagnose abnormal conditions and barrier degradation
- Prioritize reliability, maintenance, and integrity actions
- Evaluate start-up, shutdown, offloading, and emergency readiness

Course Agenda

Day 1: Map the Integrated FLNG Facility

- FLNG Value Stream and System Boundary Map
- Feed-Gas Reception and Pretreatment Operating Envelope
- Liquefaction Cycle and Refrigerant Compression Model
- LNG and Condensate Storage Inventory Balance
- Topsides-Hull Interface Responsibility Matrix

Day 2: Control Process and Utility Performance

- Liquefaction Train Constraint and Bottleneck Map
- Boil-Off Gas Generation and Recovery Balance
- Power Generation and Electrical Load-Shedding Logic
- Cooling, Heating, Flare, and Utility Dependency Matrix
- Production Optimization and Energy Performance Dashboard

Day 3: Coordinate Marine and Offloading Operations

- Mooring, Motion, and Weather Operating-Limit Matrix
- Cargo Tank Management and Rollover Prevention Method
- LNG Carrier Approach and Compatibility Checklist
- Offloading Sequence and Emergency Release Logic
- SIMOPS Permit and Marine Coordination Plan

Day 4: Assure Reliability and Abnormal Response

- Safety-Critical Element and Performance Standard Register
- Reliability-Centered Maintenance Decision Worksheet
- Process Alarm, Trip, and Cause-and-Effect Review
- Abnormal Situation and Emergency Coordination Matrix
- Start-up, Shutdown, and Shift-Handover Assurance Checklist

Day 5: Practice Integrated FLNG Assurance

- Suggested Exercise: Diagnose a Refrigeration and Utility Interaction
- Suggested Exercise: Reconcile Storage, Boil-Off Gas, and Offloading Constraints
- Suggested Exercise: Control a SIMOPS and Marine-Motion Scenario
- Suggested Exercise: Prioritize Reliability and Integrity Actions
- Capstone Exercise: Complete the FLNG Integrated Operations and Assurance File

Practical Exercises

The course uses suggested activities to connect process performance, marine limits, operating discipline, and assurance decisions.

- Suggested activity: map feed-gas, refrigerant, LNG, condensate, utility, flare, and electrical dependencies across the facility.
- Suggested activity: evaluate a storage and offloading scenario against marine limits, boil-off gas capacity, and SIMOPS controls.
- Suggested activity: diagnose an abnormal process condition using alarms, trips, barriers, and cause-and-effect information.
- Suggested activity: assemble readiness evidence, reliability priorities, interface controls, and emergency actions into the capstone file.

FAQs

Who suits advanced FLNG technology and integrated operations training, and what does it assume?

Advanced FLNG training suits process, marine, operations, maintenance, HSE, project, and assurance personnel. It assumes prior exposure to LNG or offshore process systems and established work-control practices.

How does advanced FLNG operations training differ from LNG terminal operations training?

Advanced FLNG operations training integrates onboard liquefaction, floating storage, marine motion, hull interfaces, utilities, and offshore offloading. LNG terminal operations training normally centers on fixed-facility receipt, storage, send-out, or ship-shore transfer.

How are process and marine constraints managed during FLNG offloading?

Process and marine constraints are managed through agreed weather and motion limits, cargo compatibility, storage margins, boil-off gas capacity, communications, SIMOPS controls, transfer sequences, and emergency release logic.

What drives FLNG reliability and production optimization?

FLNG reliability and production optimization depend on process constraints, refrigerant compression, utility availability, equipment condition, storage capacity, marine limits, maintenance priorities, and disciplined response to alarms and degrading barriers.

How does FLNG emergency coordination connect topsides and marine teams?

FLNG emergency coordination connects detection, alarms, shutdown logic, marine position, cargo transfer status, muster, communications, command roles, and recovery criteria through shared scenarios and verified interfaces.

Conclusion

Participants take back an FLNG Integrated Operations and Assurance File linking system boundaries, operating envelopes, marine constraints, interface controls, reliability actions, and emergency coordination. The file changes separate technical records into a shared operating picture. It supports readiness reviews, shift decisions, maintenance priorities, abnormal response, offloading assurance, and production improvement.

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