

2020 LNG Loading Master & Certification (3 Days)



To work as a Loading Master, one has to have the operational knowledge, the technical skill and has to understand the LNG ship/shore Interface. This training is designed to train and certify those who are working in LNG Marine Terminals, FNLG (Floating Liquefied Natural Gas Barges or Vessels and in management of LNG facilities.

Session 1. Skills and Knowledge Evaluation

Examine through brief interaction existing knowledge of the attendees to identify which areas need to be covered in more detail

Session 2. Introduction to LNG Shipping and Storage

- Why Liquefy?
- Cryogenic temperatures and their effect on Mild steel
- Why Safety is a priority?

Session 3. Supply Chain: Source-Ship-Terminal: Custody Transfer principle

- Why LNG shipping is booming?
- Effect of Fukushima Nuclear Disaster on LNG demand
- Is LNG the fuel of the future

Session 4. Tank Terminal Principles for Loading and Discharging

- Role and Responsibilities of Loading Master
- Loading procedures and critical operations
- Discharging procedures
- Heel Retention and Management.

Session 5. HSE Safety Checklist

- ISGOTT, SIGTTO ,ISPS, Personnel Safety Case Study, Best Practices
- Bodies that regulate the safety aspects
- What are the implications of not doing the safety right?
- Case study of the safety issue (2nd Made getting 3rd degree burns by fire on Manifold)
- Purging and gas freeing pipelines before connection
- Use of Multi-Gas Detectors and Importance of calibration

Session 6. Cargo Load/Discharge Plan/Cargo Cycle Stages

- Example of a Load/Discharge plan and various stages involved
- Why planning is critical?
- Ship preparation, Inerting, Gassing up, Cool Down, Loading, Discharging, Inerting, Gas Freeing and Preparation for Dry Dock.
- Use of Cool Down Curves.
- Inert Gas and CO₂ ice formation issues
- LNG tank Commissioning

Session 7. LNG Ship and Shore Tanks Specifics

- Tanks design principles and standard designs
- The importance of Void Space and gas detection
- How can cargo sloshing damage the tanks?
- Effect of sloshing on different types of LNG Tanks spherical / membrane, etc

Session 8. Standard Mooring Arrangements for LNG ships

- Overview of Mooring Arrangements.
- Emergency Release hooks
- Use of Fire wires
- Function and use of Emergency Release Coupling

Session 9. Case study discussion on operational risks

- Risk management with LNG.
- Leakage of LNG from Cargo Manifolds
- How to detect leakages?
- How to prevent leakages?

Session 10. Ship-Shore Communications

- Verbal & Written/Hotline
- Why it is important to have multiple means and what are they?
- Language and culture issues in communication?
- Mock exercise between participants on ship-shore meeting. With one participant playing the Role of Loading Master and other acting as ship's chief officer.

Session 11. Ship-Shore Interface/Emergency Shutdown Systems

- Electric and Fiber Optic shutdown systems

- Pneumatic Shut down systems
- Types of Shut Down systems ESD1 and ESDII
- Why shut-down must be done? Preferable method of shutting down.

Session 12. Cargo Documents: Bill of Lading, Manifest, Quality, Quantity Certificates

- “Take or Pay” principle in Cargo contracts
- Penalty for “Non-Supply”
- “Off Spec” cargo
- Trading terms such as MBTU,
- Discuss Commercial aspects such as CTMS and Cargo Documentation.

Session 13. LNG Vessel Unloading Sequence

- How the cargo is transferred from Vessel to the terminal?
- Challenges faced during the transfer
- Operational Limitations of Electric Deep well Cargo pumps

Session 14. LNG Calculation Methods

- Custody Transfer Measurement system
- Use of ship’s figure as Bill of Lading figure
- How to determine the final outturn?
- Potential disputes and temperature calculations

Session 15. Quality control and Sampling Procedures

- Handling of Samples
- Sampling of LNG
- Transporting and Sealing Samples

Session 16. Interactive LNG Ship Handling Simulation

- Minimize port turnaround time in import facility
- How to minimise vessel stay in port?
- Why missing the tide can be expensive?
- What can go wrong?
- Technical limitations of vessel and terminal
- Decision making exercises (Delegates are divided into groups and given case scenarios they are then allowed to make decisions and then discuss/share the decisions they made).

Session 17. Case Study on Best Practices in LNG Import Terminals in Japan

- The NYK way of Handling LNG
- Tokyo Gas – Incident Free LNG operations

Session 18. Review of Workshop Materials and Written Examination for Loading Masters for LNG Terminals

- Results- discussion and evaluation
- Awarding of Loading Master Certificates of Competence
- Discuss the Answers with the delegates and find out competency gaps among those who fail and propose advanced training.



TTT Instructor : Capt. Shyam Paliwal

- Experienced, proven, entrepreneurial maritime leader with record of high achievement and proactive approach to excellence who welcomes challenges as an opportunity to excel and recognizes that the satisfactions of accomplishment far outweigh the burden of leadership:
- 12 continuous years of successful hands-on problem solving and decision making experience in challenging, dynamic and multifaceted marine work environments at sea and ashore, in position of responsibility or other crucial decision-making leadership capacity.
- 7 years as senior officer aboard deep-draft LNG Tanker vessels transporting volatile cargoes in the world-wide liquid gas trade, with an unblemished safety record and outstanding personnel evaluations.
- 5 Years work experience at LNG and Oil Tanker Terminals in Korea in capacity of LNG advisor to Shell Shipping and Trading Company. Commissioned the 4 largest LNG carriers in the world the Q-Max vessels at LNG Import terminals in Korea. Each vessel is an LNG terminal on it's own with a Re-Liquefaction plant and an enclosed Flare.
- Supervised Building of 25 Oil and LNG Tankers at Samsung, Daewoo and Hyundai Shipyards in Korea as a Nautical Inspector while working for Shell in South Korea.
- 2 Years work experience as LNG consultant with Tank Terminal and Training Netherlands.
- Provided LNG marine operations, safety, and regulatory compliance consulting services to major energy and marine transportation companies.
- Significant shore side operations management experience with broad knowledge of commercial aspects of global maritime enterprise and energy shipping.
- **Master Mariner License IFOO-8700 from Government of India. Member of Nautical Institute UK.**
- LNG simulator training from Various Institutes worldwide Including Warsash Maritime Academy UK, and NYK Maritime Training Centre Yokohama.

We make people better!