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**REPUBLIC OF THE PHILIPPINES**

**DEPARTMENT OF TRANSPORTATION**

**MARITIME INDUSTRY AUTHORITY**

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| **INVENTORY OF TEACHING AIDS AND REFERENCES** |

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| **Training Course:** | Refresher Course on Advanced Training for Liquefied Gas Tanker Cargo Operations |
| **Name of Maritime Training Institution:** |  |

| *Note: Substitute textbooks and videos can be used provided they contain the same content of the required.* | **Self-Assessment** | **Tabletop Evaluation** | **Inspection** | **Remarks** |
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| **To be accomplished by applicant MTI** | **To be accomplished by designated Tabletop Evaluator** | **To be accomplished by designated Evaluation and Inspection Team (EIT)** |
| **Items** | **Hardcopy** | **Electronic Copy** | **Complied** | **Not Complied** | **Complied** | **Not Complied** |  |
| **Teaching Aids (A):** |
| 1. Visual Presentations
 |  |  |  |  |  |  |  |
| 1. Training videos related to topics
 |  |  |  |  |  |  |  |
| 1. Pictures/Charts/Diagrams/Table
* Cargo piping lines diagram
* Cargo Compatibility Chart
* Arrangement of the pipes and valves of a cargo tank
* Mollier Diagram
* Density Table
 |  |  |  |  |  |  |  |
| 1. Various Checklist and Forms:
* Permit to Work
* Risk Assessment
* Ship Shore Safety Checklist
* Cargo Operation Log Sheet
* Ship to Ship Transfer
* Personnel Protective Equipment (PPE) Matrix
 |  |  |  |  |  |  |  |
| 1. Various Plans / Manuals
* Ship Emergency Response Plan
* Simulator Manual
* Manual on gas detector equipment
 |  |  |  |  |  |  |  |
| 1. Material Safety Data Sheet (MSDS) / Safety Data Sheets (SDS) / Emergency Response as per MFAG
 |  |  |  |  |  |  |  |
| 1. Exercise Sheets
2. Analyze the effectiveness of the applied control measure in a given liquefied tanker cargo operation situation
3. Calibrate and use monitoring and gas detection system, instruments and equipment using span gases in accordance with the manufacturer’s manual and good safety practice
4. Evaluate the procedure used in preventing pollution of atmosphere and environment in given scenario
5. Conduct risk assessment for the following tasks:
* entering enclosed space
* before and during repair and maintenance work
* hot and cold work
* electrical safety
1. Assess the operation of the monitoring and safety systems including emergency shutdown during cargo operations
2. Calculate the volume of liquefied gas cargo manually using the cargo calculation sheet and simulator with the given parameters:
* temperature
* pressure
* cargo density
* volume coefficient factor
* ship’s trim
1. Liquefied cargo-related operations
* Apply cargo-related procedure taking into consideration the safe preparations
* Monitor and assess the cargo operation such as proper loading, stowage and unloading of liquefied gas cargoes
1. Analyze the effect of bulk liquid cargoes on trim, stability and structural integrity of a liquefied gas tanker
2. Manage and supervise personnel in the performance of cargo operation following the procedures and standards of work including the allocation of duties
 |  |  |  |  |  |  |  |
| **IMO References (R):***MTIs may use additional references as deemed necessary to meet the intended learning outcomes of this training course.* |
| 1. International Maritime Organization. 2017. *International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended*. (latest edition)
 |  |  |  |  |  |  |  |
| 1. International Maritime Organization. 2022. *International Convention for the Prevention of Pollution from Ships, (MARPOL)* (latest edition)
 |  |  |  |  |  |  |  |
| 1. International Maritime Organization. 2020. *International Convention for the Safety of Life at Sea (SOLAS)*, (latest edition)
 |  |  |  |  |  |  |  |
| 1. International Maritime Organization. 2016. *International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)*, (latest edition)
 |  |  |  |  |  |  |  |
| 1. International Maritime Organization. 2020. International Code for the Construction and Equipment of Ships Carrying Dangerous Chemical in Bulk (IBC Code), (latest edition)
 |  |  |  |  |  |  |  |
| 1. IMO Resolution A.1050 (27), Revised Recommendations for Entering Enclosed Spaces aboard Ships
 |  |  |  |  |  |  |  |
| 1. International Maritime Organization. 2018. *International Safety Management Code (ISM Code)*, (latest edition)
 |  |  |  |  |  |  |  |
| 1. International Maritime Organization. 2014. *Medical First Aid Guide for Use in Accidents Involving Dangerous Goods (MFAG)*. (latest edition)
 |  |  |  |  |  |  |  |
| **Bibliography (B):***The training provider may choose books from bibliographic list or use other or additional references provided it has similar content to the latest edition and addresses the achievement of all intended learning outcomes. Electronic publications may be accepted as alternatives to printed copies of the latest editions and must be sourced from authorized publishers.* |
| 1. International Chamber of Shipping. 2023. *Tanker Safety Guide (Liquefied Gas)*, (Fourth Edition). 7th Floor Walsingham House 35 Seething Lane London EC3N 4AH
 |  |  |  |  |  |  |  |
| 1. Maritime and Coastguard Agency. 2015. *Code of Safe Working Practices for Merchant Seafarers (COSWP)* (Consolidated edition May 2018 incorporating amendments 1 and 2 edition). TSO Standing Order Department, PO Box 29, St. Crispins, Duke Street, Norwich, NR3 IGN
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| 1. OCIMF. CDI, ICS, SIGTTO. 2013. Ship to Ship Transfer Guide for Petroleum, Chemicals and Liquefied Gases, (First Edition). Witherby Seamanship International, Livingston, United Kingdom.
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| 1. OCIMF. (2017). *Tanker Management and Self-Assessment 3 (TMSAS3): A Best-Practice Guide* (latest edition). Oil Companies International Marine Forum, 29 Queen Anne's Gate, London, SW1H 9BU, England
 |  |  |  |  |  |  |  |
| 1. OCMIF. 2012. *Marine Terminal Management and Self-Assessment (MTMSA): A Best Practice Guide for Terminal Management* (First Edition) Witherby Seamanship International, Livingston, United Kingdom
 |  |  |  |  |  |  |  |
| 1. SIGTTO. (2023). *Liquefied Gas Carriers: Your Personal Safety Guide,* (Fourth Edition), Witherby Seamanship International, Livingston, United Kingdom
 |  |  |  |  |  |  |  |
| 1. SIGTTO. (2022). *LPG Shipping Suggested Competency Standards: Guidance and suggested Best Practice for LPG industry in the 21st century*. (Second Edition). Witherby Seamanship International, Livingston, United Kingdom
 |  |  |  |  |  |  |  |
| 1. SIGTTO. (2016). *Liquefied Gas Handling Principles on Ships and in Terminal,* (Fourth Edition). Witherby Seamanship International, Livingston, United Kingdom
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| 1. Taylor and Francis (Routledge, CRC). 2006. *LNG Operational Practice*, Witherby Seamanship International, Livingston, United Kingdom
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| 1. Witherby Seamanship International 2007. *Tanker Safety Training (Liquefied Gas) Specialized Level*. Witherby Seamanship International, Livingston, United Kingdom
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| **Accomplished by** | **:** |  |  | **Date** | **:** |  |
|  |  | Name and Signature ofMTI’s Authorized Representative |  |  |  |  |

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| **Table Top Evaluator’s Comments:** |
|  |  |  | **Date of Evaluation** |  |  |  |
|  | **Table Top Evaluator’s Name & Signature** |  |  |  |  |  |
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| **Inspector’s Comments:** |
|  |  |  | **Date of Inspection** |  |  |  |
|  | **Inspector’s Name & Signature** |  |  |  |  |  |
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