

LNG Shipping and Cargo Handling CD Course (Contents)

Background and Introduction

- The LNG Value Chain
- Field Development
- Import vs. Export Terminals
- Ships

The Import Terminal

- Operations Overview
- Unloading
- Vapor Handling
- Storage, Pumping
- Recondensing
- Booster Pumps
- Vaporization
- Metering and Sendout

LNG Ships

- Ship Size and Dimensions
- Membrane-Type LNG Ships
- Spherical-Type LNG Ships
- Port Infrastructure Requirements
- LNG Ship Propulsion
- Ship Manning Requirements
- Ship Manning Hierarchy
- Ship Operations
- Operations at Sea
- Heel Leg
- Loaded Leg
- Arrival at the Port
- Transiting the Harbor
- Docking the LNG Ship
- Typical Mooring Plan
- Undocking the LNG Ship

The Dock

- Dock Equipment
- Berthing the Ship
- Unloading
- Weather
- Ship-to-Shore Communications
- Safety Systems
- Emergency Shutdown System
- Hazard Detection and Warnings
- Powered Emergency Release Coupling (PERCs)
- Firewater and Dry Chemical Extinguishers

Cargo Unloading Operation

- Preparations for Unloading
- Government Requirements
- Cargo Transfer Preparations

- Connecting the Unloading Arms
- Activating Protective Systems
- Connecting Communication Systems
- Transferring Stores
- Establishing Protocols and Schedules
- Implementing Custody Transfer
- Testing the Systems
- Cooling the Unloading Arms
- Beginning the Cargo Transfer
- Maintaining the Tank Pressure
- Operating at Full Rate
- Ballasting the Ship
- Ramping Down the Transfer Rate
- Purging the Liquid
- Disconnecting the Arms
- Securing the Cargo Control Room

Maintenance and Training

- The Marine Environment
- Maintenance
- Abnormal Incidents
 - Water Hammer
 - Geysering
 - Rollover
 - Spills
 - Ice and Snow
 - Fires
 - Collisions and Allisions
 - Rapid-Phase Transition
 - Sudden Weather
- Powered Emergency Release Coupling
- Training

Security Requirements

- LNG Facility Security
- Code Requirements for Exclusion Zones
- Containment and Trench Philosophy
- Example of Double-Containment Tank Concept, Thermal Radiation
- Vapor Dispersion
- Exclusion Zones—A Comparison
- U.S. Coast Guard OPLAN
- Maritime Transportation Security Act
- International Ship and Port Facility Security Code
- International Ship Security Certificate
- Automated Identification System
- Conditions for Entering a Port
- Ports, Port Facilities, and Ships
- Security Assessment
- Mitigation
- Security Plan