LNG Shipping and Cargo Handling Online 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
  - Section Knowledge Check

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
  - Section Knowledge Check

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
  - Section Knowledge Check

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
  - Section Knowledge Check

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
  - Section Knowledge Check

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
  - Final Exam