

€ TRAINING

Safety Standards in Oil and Gas Terminals





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Introduction:

In this training program the participants coming from companies that operate marine terminals will be provided with the necessary knowledge and updated tools and skills that will enable them to successfully handle various technical and safety issues during terminal operations such as cargo transfer support. This training course will focus on both managerial and technical aspects of the terminal operation that are prerequisites for the successful operation of such complex facilities.

Program Objectives:

At the end of this program the participants will be able to:

- Gain in-depth knowledge of oil & gas marine terminal operations and management.
- Recognize international regulations and requirements applicable to oil & gas marine terminals.
- Apply proper planning techniques for storage and transfer systems in oil & gas marine terminals.
- Discuss various vessel operations, including oil tankers and gas carriers, in oil & gas marine terminals.
- Develop terminal management skills for berthing support, cargo transfer, emergency response, and vessel departure support.
- Implement safe practices and procedures, including oil spill contingency plans, during oil & gas terminal operations, utilizing qualitative and quantitative risk assessment techniques.

Targeted Audience:

- Marine Terminal Facility Managers and Coordinators.
- Terminal Superintendents, Supervisors, and Engineers.
- Safety and Environmental Managers, Engineers and Officers.
- Spill Management Team Members.
- Transfer Supervisors.
- Marine Shipping Coordinators.
- Dock Maintenance Planners.

Program Outlines:

Unit 1:

Cargo Properties:

- Understanding Dangerous Cargos: Exploring hazardous materials and their properties.
- Toxicity and Confined Spaces: Recognizing the dangers of confined spaces and toxic atmospheres.
- Breathable Atmospheres and Hydrocarbon Properties: Ensuring safe air quality and understanding hydrocarbon characteristics.
- Types of Dangerous Cargos: Examining crude oil, Liquefied Petroleum Gas LPG, and Liquefied Natural Gas LNG.
- UEL & LEL and BLEVE: Learning about Upper and Lower Explosive Limits and Boiling Liquid Expanding Vapor Explosions.
- Fire and Explosion Risks: Identifying risks associated with fires, explosions, and pancake cloud explosions.

Unit 2:

Storage & Transfer:

- Understanding Storage Tanks: Exploring atmospheric aboveground storage tanks and their variations.
- Tank Design and Types: Examining floating roof, fixed roof, variable vapor space, and pressurized tanks.
- Tank Maintenance: Learning about inspections, cleaning, and safety protocols.
- Transfer Systems: Understanding centrifugal pump design and operation, as well as piping systems.
- Marine Loading Arms and Lightering: Exploring equipment for ship-shore transfers and lightering procedures.
- Safety Checklist and Procedures: Implementing ship-shore safety checklists and ensuring safe ship-shore transfers.

Unit 3:

Harbour & Vessels:

- Port Infrastructure: Understanding jetties, quays, wharves, and Single Buoy Moorings SBMs.
- Harbor Design and Construction: Exploring the planning and building of harbors to accommodate vessels.
- Tidal Effects and Depth Constraints: Considering sizing, tidal effects, and dredging operations to maintain suitable depths.
- SBM Design and Hoses: Examining the design and construction of SBMs and associated hoses for cargo transfer.

- Cargo Handling: Ensuring cargo compatibility and implementing marking and testing procedures.
- Storage and Maintenance: Managing storage facilities and maintenance operations for equipment and infrastructure.
- Bunkering and Emergency Response: Addressing bunkering procedures and establishing communication and emergency response plans for shipboard management.

Unit 4:

Safety & Risk:

- Identifying Ignition Sources: Understanding potential sources of ignition in hazardous environments.
- Electrostatic Charge and Hazardous Zones: Exploring electrostatic charge risks and hazardous zone classification.
- Intrinsically Safe Equipment: Utilizing equipment designed to operate safely in hazardous areas.
- Fire Prevention and Detection: Implementing fire fighting and protection measures, including detection and suppression systems.
- Shipboard Firefighting Systems: Managing firefighting equipment and procedures aboard ships.
- Risk Assessment and Management: Conducting qualitative and quantitative risk assessments to mitigate hazards and ensure safety.

Unit 5:

Terminal Management:

- Storage & transfer planning.
- Berthing support.
- Cargo transfer support.
- Emergency response.
- Vessel departure support.
- Security and vessel access.
- International regulations & requirements for oil & gas marine terminals.