



THE CHEMICAL ENGINEERING MAJOR

Liquid Bulk Cargo Handling Tank Cleaning

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Introduction:

Liquid Bulk Cargo handling plays a critical role in the ongoing expansion of the oil industry, especially with the continuing growth of the spot/short term market and the dynamic expansion of markets and supply sources. This program provides an understanding of liquid bulk cargo storage at the marine terminal, Crude Oil Cargo Handling, LNG Cargo Handling, Cargo Calculations and other useful topics related to safety and pollution prevention.

Who Should Attend?

This program is intended for marine terminal staff, marine operation staff, oil movement personnel, custody measurement people, metering engineers and process engineers who have limited direct understanding of Liquid Bulk handling operations and as a base Program for trainees with little or no experience of Liquid Bulk handling operations. Also for Process/facilities engineers, senior operating personnel, and production chemists.

Objectives:

Upon the successful completion of the program, participants will be able to:-

- Have a very good overview of liquid bulk cargo handling such as the basic properties of petroleum, toxicity of petroleum, properties of liquefied gas and the principles of gas
- Become acquainted with liquid bulk cargo storage particularly the tank farm overview & installation, crude oil dehydration, desalting & stabilization and the types of storage tanks & their accessories
- Know the basic operation & inspection of tanks and identify the various methods of gauging tanks

Course Contents:

- Understand and employ crude oil cargo handling including the hydrocarbon gas evolution & dispersion, electrical equipment and installations, static electricity and pressure surge
- Identify the various flammability hazards associated with handling and be able to determine the hazards of petroleum as well as the precautions on tankers and tank areas
- Review and improve liaison between tanker and terminal and recognize the various requirements, guidelines and methods of handling of cargo and ballast

- Understand tank cleaning and gas freeing and be able to describe fixed inert gas systems
- Become familiar with enclosed space entry, carriers & packaged cargoes in crude oil cargo handling and be able to recognize the emergency procedures in crude oil cargo handling
- Develop in-depth understanding of LNG cargo handling by becoming familiar with the equipment & instrumentation of the ship and terminal
- Employ cargo measurement & calculations in LNG cargo handling and be able to recognize the personal health & safety issues in cargo handling
- Illustrate the method of cargo calculation in flow measurement, meter proving & meter factor and be able to describe gas freeing of tanks
- Employ cleaning of crude tank and be able to determine its importance in liquid bulk cargo handling
- Provide participants with a complete and up-to-date overview of the oil movements & storage operations in modern refineries, marine terminals and oil plants
- Acquire knowledge on oil production, recovery, dehydration & desalting and be able to understand the description & installation of a tank farm

- Identify the different types of tank and review & improve the operation of a tank farm
- Illustrate the process of gas freeing of tanks & vessels and be able to determine the various methods of gauging tanks
- Employ crude oil processing in modern refineries, marine terminals & oil plants and become familiar with LPG refrigeration, handling & bulk storage
- Describe marine terminal & SPM operations and be able to explain the various product specifications
- Perform blending, tank mixing, meters & meter proving and cleaning of crude oil & leaded gasoline tanks
- Become familiar with static electricity and recognize its importance in oil movement, storage & troubleshooting
- Identify oil spill emergencies and be able to review the operation & cathodic protection of gas transmission lines
- Increase knowledge on pigging of crude & gas pipelines and be able to demonstrate the process of ship loading
- Recognize the role & importance of quality assurance, control & work permit system
- Present actual case studies from around the world to highlight the topics discussed.