



## Tank Farm Operations and Performance Training

### Description

#### The Objectives:

Attendance of this five days course will ensure the delegates of being able to:

- Have in-depth knowledge of operations & management of oil and oil product terminals
- Apply proper planning and scheduling techniques in storage & transfer systems
- Command the various planning and transfer requirements for terminals
- Develop good terminal management skills
- Apply safe practices and procedures during the various operations in terminals including oil spill contingency and emergency response plans
- Learn techniques on blending recipes for on specification products
- Perform calculations for emissions discharges and dispersion

#### The Content:

### Crude Oil and Product Properties

#### Introduction and Overview

#### Evaluation of delegates' present skills and knowledge

- Stored product properties
- Liquefied petroleum Gases
- Gasoline
- Jet Fuel
- Diesel
- Light Fuel oil
- Heavy Fuel Oil
- Bitumen
- Crude oil
- Light petroleum products

- Heavy petroleum products
- Chemicals

### **Safety and Risk**

- Fire fighting & protection
- Ignition sources – Electrostatic charge
- Fire detection and fire fighting systems
- Risk assessments and management
- Oil Spills
- Secondary Containment, Bund walls
- The Ship/Shore Safety Checklist

### **Tank types, construction & Requirements for Stored Products**

#### **Tank farms differences and purpose**

- Crude Storage
- Refined product storage
- Gas storage
- Chemical Storage

#### **Tank design & engineering considerations**

- Introduction to API codes & standards
- Roof Types
- Fixed Dome & Cone
- Floating Roof
- Pressurized tanks
- Suction levels fixed and floating
- Unpumpables
- Tank Emissions
- Breathing Losses
- Manipulation Losses
- Measurement and estimation of losses
- Emission reduction technologies
- Vapor recovery units
- Absorption and Scrubbing
- Water drainage systems network and procedures
- Process water treatment

#### **Tank Terminal Operations**

- Transfer Systems
- Centrifugal pumps types and operation
- Piping systems
- Maximum Flow and pressure
- Ship-shore Transfers

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- Loading and unloading Processes
  - Ship Loading and discharge process
  - Pipeline transfers
  - Truck loading
  - The of Bill of Lading
  - Sampling and quality control – ISO 17025
  - Stock loss
  - Spill and overflow control
  - Level alarms/ independent level alarms
  - Tank gauging and metering
  - Instrumentation

### **Terminal Management**

- Planning and scheduling
- Terminal inventory
- Unpumpables & pipeline content ownership
- Inventory Control
- Custody transfer and administration
- Transfer Procedures
- Inter Tank transfers
- Changing service tanks
- Pipeline transfer loss
- Pipeline thermal relief
- Storage & transfer
- Tank calibration/ recalibration
- Berthing support
- Cargo transfer support
- Emergency response
- Vessel departure support

### **International regulations & requirements for oil & gas marine terminals**

- Physical, chemical & hazardous properties of contained fluids
- ISGOTT – Required notifications in the event of a release
- Record keeping and reporting
- Release detection, response, reporting and investigation

### **Tank Maintenance & Inspection**

- API 653 Tank Inspection
- Tank failure causes and prevention
- Settling
- Corrosion inspection
- Tank cleaning
- Bunkering
- Product Commingling
- Product Blending

- Product failures
- Blending exercise

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