



مركز المستشار الوطني للتدريب
National Consultant Centre For Training

**5-Day Intensive Training Course
In**

Terminal Operation and Shipping Documentation

Dubai, 03 – 07 November 2013

Course Objectives:

The course will enable participants to fully understand all types of measurements used in crude oil & petroleum product in tank farms & depots. The course will also cover shipping operations and the related ship/shore documentations

Who should attend?

This course is intended for terminal operators and staff responsible for shipping documentation

Course Contents

1. Crude & Products Storage Tanks

- Types
- Design
- Foundations

2. Introduction to petroleum measurement and loss control

- Types of errors
- Sources of errors
- Primary and secondary measurements

3. Calibration of upright cylindrical tanks

- Tank Preparation
- Bottom survey
- Strapping methods
- Optical reference line methods
- Electro-optical distance ranging method

4. Manual measurement

- Manual level measurement
- Manual temperature measurement
- Manual free water measurement
- Manual sampling

5. Common Problems in manual measurement

- Bottom movement
- Sludge formation
- Temperature measurement
- Sampling
- Free water determination

6. Automatic tank gauging systems

- Types of automatic tank gauging systems
- Principle of operation
- Level , free water and density measurement



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- Automatic temperature compensation
- Specifications
- Installation
- Operation
- Interface with terminal automation system
- System configuration
- Calibration
- Maintenance techniques

7. Quantity calculations in storage tanks

8. Dynamic measurement

- Positive displacement meters
 - Principle of operation
 - Remote readout
 - Maintenance
 - Metering line
 - Installation
- Turbine Meter
 - Principle of operation
 - Remote readout
 - Maintenance
 - Metering line
 - Installation

9. Proving systems

- Tank prover method
- Pipe prover method
- Master meter method

10. Petroleum quantity calculations.

- Shore tank calculation
 - Standard tables
 - Correction and conversion factors
 - Example for inland roof tank calculation
 - International system of units SI
 - Roof displacement calculations
- Shipboard calculation
 - Wedge formula
 - Example for vessel calculations
 - Vessel experience factor
- Dynamic quantity calculations
 - Correction factors
 - Example for dynamic calculation
 - Proving reports and K-factor

11. Typical measurement documentation

- Report of shore quantity
- Bunker inspection report
- Inspection check list
- Letter of protest – shore
- Load on top monitoring record
- Bill of lading
- Cargo quantity options certificate
- Laboratory report of quality
- Letter of protest – vessel



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- Marine – cargo inspection – sample receipt
- Notice of apparent discrepancy
- Slop record
- Telex communication
- Vessel discharge record
- Voyage analysis report
- Wedge calculations
- OBQ / ROB report
- Tank inspection report
- Tim log
- Vessel experience factor record
- Voyage shore comparison with VEF
- Metered quantity report

12. Legal aspects of the transportation by water of crude oil and petroleum products

- Terms of sale (FOB, C & F, CII, EX-ship)
- Charter party
- Inter-relationship between charter party and bill of lading
- Cargo claims documentation and forms
- Insurance
- Laytime
- Specifications of vessels calling the terminal
- Bill of lading
- Disputes
- Demurrage