

# Oil Movement, Storage and Troubleshooting

## INTRODUCTION

- Correct management and operation of an oil and gas terminal is essential for a successful business. The processing, transporting and storing of crude oil or refined petroleum products in tank farms, involve custody transfers of partner and commingled stock, significant volumes of data from various sources and blending complexities.
- In addition, as these liquids are loaded and offloaded in bulk quantities, there is a large transfer of high value that makes it imperative for tank farm operators to efficiently manage their inventory and maximize their return on investment.
- Upon successful completion of this training course on Oil Movement, Storage and Troubleshooting, participants will have gained the right knowledge on oil production and recovery, oil terminals and tank farms, methods of tank gauging, storage of refrigerated LNG, oil products specifications, tank mixing, emergency of oil spills, cleaning of crude oil tanks, work permit system, gas transmission pipelines, pigging operations in crude oil pipelines, quality assurance and control, contingency and safety procedures etc.

## PROGRAMME OBJECTIVES

- This training course on Oil Movement, Storage and Troubleshooting is intended to provide participants with a complete and up-to-date overview of the oil movements and storage operations in modern refineries, marine terminals and oil plants. They will:
- Acquire knowledge on oil production, recovery, dehydration and desalting and be able to understand the description and installation of a tank farm.
- Identify the different types of tanks and review and improve the operation of a tank farms and oil terminals
- Illustrate the process of gas freeing of tanks and vessels including confined entry for inspection maintenance and repair.
- Understand the steps and limitations of the various methods of gauging tanks
- Describe marine terminal & SPM operations and be able to explain the various product specifications
- Perform blending, tank mixing, meters and meter proving and cleaning of crude oil and product gasoline tanks
- Learn how oil spill emergencies are handled and how these are combated and mitigated
- Understand the causes of corrosion, be able to review the operation and cathodic protection of gas transmission lines
- Recognize the role and importance of quality assurance and control

## WHO SHOULD ATTEND?

- Team Leaders
- Project Professionals
- Refinery Personnel
- Oil Terminal Superintendent / Supervisors
- Plant Supervisors
- Process Engineers
- Mechanical Engineers
- Electrical Engineers
- Instrumentation / Control Engineers
- Technical Staff and Contractor Personnel involved in oil movement and storage

## TRAINING METHODOLOGY

- Oil Movement, Storage & Troubleshooting training course is a hands-on, stimulating learning experience. The training course will be highly interactive, with opportunities to advance your opinions and ideas. Participation is encouraged in a supportive environment.
- To ensure the concepts introduced during the training course are understood, they will be reinforced through a mix of learning methods, including PowerPoint slides and videos. This will be augmented by case studies and facilitated discussions, to engage the delegates and to encourage the exchange of ideas.
- The training course will be reinforced with the use of PC's with simulations to estimate emission losses and calculations using Microsoft Excel® to practice tank gauging calculations, blending to meet specification and for off spec product corrections. Participants should bring their own laptop loaded with Microsoft Excel® for simulation exercises.

## PROGRAMME SUMMARY

- Oil Movement, Storage & Troubleshooting training course describes the requirements for efficient, effective, and safe operation of Oil Storage facilities. This material is covered by concentrating only on the most commonly applied topics in each case, rather than attempting to discuss everything.

## PROGRAM OUTLINE

### Overview Introduction

- Oil Production, Recovery, Dehydration and Desalting
- Crude Oil Processing
- Oil Terminal & Tank Farm
- Types of Tanks

### Tanks and Facilities

- Gas Freeing of Tanks and Vessels
- Methods of Gauging Tanks
- Static Electricity
- General Description and Installation of Tank Farms
- Refrigeration of LPG, Handling and Bulk Storage

### Blending and Loading Operations

- Marine Terminal Loading: SPM Operations
- Product Specifications and Blending
- Tank Mixing & Tank-Tank Transfer
- Meter Proving and Meter Factor

### Above Ground Storage Tanks

- Oil Spills Emergency
- Cleaning of Crude Oil and product Tanks
- Gauging of Marine Cold Product Tanks
- Gas Transmission Lines: Operation & Cathodic Protection

### Cleaning & Loading

- Pigging of Crude & Gas Pipelines
- Ship Loading and Checklist
- Quality Assurance, Control and Work Permit System
- Review and Presentation of Certificates