COURSE TABLE OF CONTENTS

Terminal Operations for Oil Storage Tanks

OEM: Koenig Original • Duration: 5 Days (40 hrs)

COURSE MODULES & TOPICS

Module 1: Introduction to Oil Storage Terminals

- Role of terminals in Oil & Gas supply chain
- Types of oil storage terminals
- Terminal configurations and tank farms
- Terminal operating models and responsibilities
- Interfaces with suppliers, customers, and operators

Module 2: Terminal Systems and Tank Farm Configuration

- Types of storage tanks and their features
- Tank capacities and product compatibility
- Tank internals and measurement systems
- Tank farm arrangements and containment systems
- Tank availability and capacity planning
- Introduction to API 650, API 653, API 2000

Module 3: Product Receipt and Tank Filling Operations

- Procedures for receiving crude oil and products
- Transfer sequencing and receipt scheduling
- Tank readiness and line-up requirements
- Tank filling operations and contamination prevention
- Coordination with suppliers and operators
- Receipt planning and transfer scheduling
- Flow measurement and meter proving

Module 4: Tank Inventory Measurement and Reconciliation

- Principles of tank inventory management
- Volume and temperature correction methods
- Measurement uncertainties and operational losses
- Physical, book, and available inventory
- Custody transfer and commercial accounting
- API MPMS application for measurement
- Tank gauging and calibration
- Stock reconciliation and loss investigation

Module 5: Internal Transfer and Product Movement

- Transferring products between tanks and facilities
- Pumping systems and transfer pipelines
- Transfer sequencing and simultaneous operations
- Interface management and contamination risks
- Hydraulic constraints and pressure surges
- Transfer planning and monitoring

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- Pipeline displacement and surge analysis

Module 6: Product Loading and Dispatch Operations

- Loading and dispatch via vessels, tankers, pipelines
- Loading arms, racks, pumps, and safety systems
- Batch loading and sequence optimization
- Custody transfer and documentation
- Coordination with shipping agents and customers
- Loading plans and rate calculations
- Overfill protection and emergency shutdown
- Preparation of loading records and certificates

Module 7: Terminal Automation and Operational Monitoring

- Automation and control systems in terminals
- DCS, SCADA, TAS, and PLCs
- Instrumentation for measurement and control
- Alarm management and emergency shutdown
- Operational data management and integration
- SCADA and DCS for monitoring
- Alarm rationalization and trend analysis
- Automatic tank gauging and remote monitoring

Module 8: Terminal Safety and Environmental Protection

- Operational hazards: fire, explosion, vapour release
- Toxic exposure, spills, overfilling, static electricity