

Oil & Gas Storage Tanks: Maintenance, Operations, and Safety

Course Duration : 5 days

Date : September 15, 2025 to September 19, 2025

Location : Singapore

Type of Participant : This course is designed for professionals involved in the operation, maintenance, and safety of storage tanks within oil and gas facilities, including operations engineers, maintenance technicians, HSE officers, plant supervisors, quality control personnel, facility managers, process and mechanical engineers, environmental compliance specialists, contractors providing tank services, and regulatory or audit staff seeking to enhance their knowledge and skills in storage tank management.

Summary:

This course offers a comprehensive understanding of the operations, maintenance, and safety procedures for storage tanks in oil and gas facilities. Participants will gain hands-on knowledge and insight into industry standards for managing the integrity, safety, and reliability of hydrocarbon storage systems.

With a strong emphasis on environmental protection, leak prevention, and risk mitigation, the training includes real-life scenarios and structured modules designed to build both foundational and advanced competencies. It aims to help professionals optimize asset performance while ensuring compliance with safety and environmental regulations.

Objective:

By the end of the course, participants will be able to:



- Classify storage tank types and understand relevant standards (API 650, 620, 653)
- Identify structural components and tank accessories
- Conduct inspections for tank integrity (foundation, shell, roof)
- Perform tank cleaning and gas freeing procedures safely
- Execute planned shutdowns and commissioning tasks
- Analyze equipment failure and recommend corrective actions
- Conduct hazard analysis and risk assessments
- Follow confined space entry and safety protocols
- Monitor corrosion and apply protection methods
- Evaluate environmental risks and overfill scenarios
- Interpret operational data for maintenance planning
- Ensure regulatory compliance
- Prepare detailed inspection and maintenance reports
- Use non-destructive testing techniques
- Integrate safety into day-to-day operations

Contents:

Module 1: Fundamentals of Storage Tank Operations

- Tank types, components, and classification standards
- Liquid behavior and gauging systems
- Inventory and product management
- Tank farm layout optimization

Module 2: Maintenance and Inspection

- Routine inspections and emergency checks
- Common defects and repair methods
- NDT tools (UT, RT, MPI)
- Cathodic protection systems
- Digital inspection trends



Module 3: Safety Procedures

- HAZOP studies and risk assessments
- Confined space entry and gas detection
- Fire and explosion risk prevention
- Spill containment and emergency planning
- PPE and safety compliance

Module 4: Environmental and Regulatory Compliance

- Emission control and leak detection
- Spill prevention systems and audits
- Sludge and waste handling
- Stakeholder and community engagement

Module 5: Operational Excellence and Innovation

- Automation and SCADA integration
- Real-time monitoring and digital twins
- Remote inspection via drones
- Lifecycle management and KPI tracking
- Continuous improvement strategies

Training Methodology:

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