

€ TRAINING

Aboveground Storage Tank Inspector API
653





Aboveground Storage Tank Inspector API 653

Introduction:

This training program offers comprehensive instruction on inspecting and maintaining aboveground storage tanks to meet API 653 standards. It equips individuals with the expertise needed to ensure the integrity and safety of aboveground storage tanks in various industrial settings.

Program Objectives:

At the end of this program, the participants will be able to:

- Gain in-depth knowledge of crude oil and product terminal operations and management.
- Apply proper planning and scheduling techniques for storage and transfer systems.
- Command various planning and transfer requirements for terminals.
- Develop strong terminal management skills.
- Apply safe practices and procedures, including oil spill contingency and emergency response plans, during terminal operations.
- Learn blending techniques for producing on-specification products.
- Understand the limitations of tank gauging methods and stay updated on new technologies and methodologies for accurate tank measurement.
- Perform calculations for emissions discharges and dispersion using dedicated simulation software.

Targeted Audience:

- Marine Terminal Managers, supervisors, and Superintendents.
- Oil and Gas refinery or product storage facility personnel, operators, engineers, and Cargo officials.
- Facility Managers and Coordinators.
- Process Engineers, Project Managers, Mechanical Engineers, Electrical Engineers, Instrumentation/Control Engineers, technical staff.
- Safety and Environmental personnel.
- Transfer Supervisors.

Program Outlines:

Unit 1:

Crude Oil and Product Properties:

- Tank farm Operations, Planning, and scheduling.
- Physical, chemical & hazardous properties of Stored products.
- Effects of Physical & chemical properties on the choice of storage, Safety and Risk.
- Ignition sources - Electrostatic charge - NFPA 77.
- Fire detection, firefighting & protection.
- Case study - I: Static Electricity Major accidents.
- Case study - II: Jet fuel conductivity adjustment.

Unit 2:

Tank Types, Construction & Requirements for Stored Products:

- Tank farm's differences and purpose.
- Tank design & engineering considerations, API codes & standards : Crude & Refined product Storage, LNG, LPG, CNG storage.
- Roof Types, Fixed, Dome & Cone.
- Floating Roof, internal/external.
- Suction levels fixed/floating.
- Estimation and Measurement of Tank Emissions and Losses.
- Case Study: Emission reduction technologies, Vapor recovery units.
- Group exercise: Emissions estimation & dispersion -Simulation Calculations Use of PC's.

Unit 3:

Tank Terminal Operations:

- Tank farm Layout, Secondary Containment, Bund walls.
- Emergency response, Handling Oil Spills.
- Water drainage systems network and Process water treatment, Ship to shore Transfers, Ship Loading, and

discharge process.

- The bill of lading, Custody transfer, and administration.
- Tank gauging and metering, meter proving, stock loss & Pipeline transfer loss.
- Sampling and quality control - ISO 17025.
- Group exercise: Loss estimation - Excel Calculations.

Unit 4:

Terminal Management:

- Competency Description:
- Terminal Inventory Control & Inter Tank transfers.
- Changing tanks service, Tank calibration/ recalibration.
- Instrumentation, flow, and level measurement, Spill and overfill control.
- Level alarms/ independent level alarms.
- Product Blending and Product failures.
- Excel Calculations: Blending exercise Use of PCs.

Unit 5:

International Regulations & Requirements for Oil & Gas Marine Terminals:

- The Seveso III Directive.
- ISGOTT - Required notifications in the event of a release.
- Release detection, response, reporting, and investigation, and Tank cleaning.
- Gas freeing and confined entry.
- API 653 Tank Inspection: Tank failure causes and prevention, Settling, and Corrosion.
- Case Study - I: Tank Inspection Final Report.
- Case Study - II: The Seveso III Directive example reports.