



MUE163

Underground Storage Tanks Design

Course Introduction:

Storage tanks play an important role in the petroleum industry. Managing the safety and operation of storage tanks is very important. This course is intended to guide the participant to the design, construction, inspection, repair and maintenance of storage tanks and introduces engineers to the application of various codes and standards applied to storage tanks. This course pays attention to relevant API standards as the main reference to the topic in question.

Course Objectives:

Upon successful completion of this course, the delegates will be able to:

- ✓ Distinguish function of structural parts and fittings to conventional storage tanks
- ✓ Explain design and operational aspects of storage tanks
- ✓ Set up inspection and maintenance programs/schedules
- ✓ Differentiate maintenance methods (condition/repair)
- ✓ Define the maintenance scope
- ✓ How to read Inspection Reports properly

Who Should Attend?

The course is suitable for storage tank engineers, inspectors, and operators involved with storage tank design/fabrication/erection/modifications/ maintenance and operation.

Course Outline:

Day 1:

OSHA CONFINED SPACE ENTRY REGULATIONS

- What is the difference between a confined space and a "permit-required" confined space?
- What are some of the "permit-required" confined spaces in the petroleum industry?
- What are the entry requirements for a "permit-required" confined space?
- When is a full "permit-required" confined space program not required?
- Example of a confined space permit

OSHA LOCKOUT/TAGOUT REGULATIONS

- How do these regulations apply to the petroleum industry?
- How to perform a lockout/tag-out shutdown?

- Who is required to comply with lockout/tag-out regulations?
- What equipment is needed to perform a shutdown?

Day 2:

HOW TO READ MSDS SHEETS

- How are MSDS sheets used at UST sites?
- What is contained in MSDS sheets?
- Who is required to have MSDS sheets?
- Examples of using MSDS sheets

REVISIONS TO NFPA 30A

- Latest NFPA 30A revisions
- Discussion of how these changes affect UST operators and technicians

Day 3:

SPILL & OVERFILL PREVENTION Spill & Overfill Prevention Regulations

- What do the federal UST regulations on spill and overfill prevention require?
- When spill and overfill prevention is not required on UST systems
- Three types of overfill prevention systems allowed in the federal regulations
- Limitations of the different overfill prevention systems
- Overfill prevention installed on remote fills
- Recently discovered problems with Spill & Overfill Equipment

Lead Detection Regulations

- Federal UST leak detection regulations
- When is leak detection not required?
- When is a precision tightness test required?
- Demonstration of all of the leak detection methods recognized in the federal UST regulations
- Leak detection is site specific. Not all methods work at all sites
- What is third party certification and how does it apply to leak detection used on USTs?
- Problems found with interstitial monitoring
- Problems found with Automatic Tank Gauging
- Suggestions for testing line leak detectors using sensors inside containment sumps

Day 4:

Piping

- Federal UST regulations for underground piping
- What are the federal regulations for steel flex connectors and piping that comes into contact with the soil?
- Requirements for Emergency Shut_OFF valves
- Requirements for vent lines
- Problems found with flexible piping systems

Static Electricity

- How Static Electricity is generated
- Fires at service stations caused by static electricity
- How to prevent fires caused by static electricity
- How to Test Continuity on Petroleum Dispensers

Day 5:

Safety Issues for Technicians

- Safety Vests - Non static generating
- Barricades to create a safe working area
- Proper signing to help create a safe workplace
- Static electricity
- The hazards of WD-40
- Specifications for the proper Fire Extinguishers used at UST sites
- Minimum personal protective equipment to be worn by UST technicians

Monitoring Instruments

- Combustible Gas Indicator - when it can and cannot be used at a UST site
- Proper instruments to use in an oxygen deficient environment
- Difference between methane responses vs. no methane response
- Oxygen Sensor
- Calibration
- Repairs

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Fees:

To be advised as per the course location. This rate includes participant's manual, and-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee/Tea
08:20 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Coffee/Tea/Snacks)
13:30 - 15:00	Last Session