



External Training Course

Storage Tank Design, Construction & Maintenance

From 05 Feb. To 09 Feb. 2024

From 04 Mar. To 08 Mar. 2024

From 06 May To 10 May 2024

TURIM Av. Liberdade Hotel, Lisbon, Portugal

Mr. Ghanem F. Al-Otaibi
GM & Institute Owner

☛ Tel.: 00965 22248901
☛ Mob.: 00965 65548855
☛ Email: admin@agi-kw.com

☛ Fax: 00965 22204999
☛ Mob.: 00965 97273712
☛ Email: agi-kw@hotmail.com

W/SITE: WWW.AGI-KW.COM

External Training Course:

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Fees: 1750 KD

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Course Description

Storage Tank Design, Construction & Maintenance is a course designed to offer the participants an insight of how tank farm storage tanks are designed, constructed, operated, inspected and maintained. This Storage Tank Design, Construction & Maintenance training course provides a comprehensive detailed overview of the American Petroleum Institute API-650, API 620 and API 2610 specifications as well as the API 653 inspection standard. Storage tanks are containers that hold flammable liquids, or compressed flammable gases for short, medium or long-term storage. Crude oil or crude product storage tank design and construction, as used in industries such as petroleum production, refinery tank farms, intermediate product storage including LPG, and product transfer operations, petrochemicals, as well as other industries consuming or producing flammable liquids, will be covered. This Storage Tank Design, Construction & Maintenance training course will highlight the most recent revisions and upcoming changes in the aforementioned standards and will in addition include essential storage tank technology not covered by these standards.

Objectives

The aim of this comprehensive Storage Tank Design, Construction & Maintenance training course is to provide the delegates with a sound understanding of the main features of flammable fluids' storage, in above ground storage tanks, that are available in many shapes and sizes and includes: vertical and horizontal, cylindrical; open or closed with or without floating roofs. In addition, you will learn the fundamentals of tank terminal design, construction, operation, maintenance, and inspection. At the end of this training course, participants will:

- Learn about Tank Design Features and Components.

- Have an Understanding of Storage Tank Construction Methods.
- Know the Various Materials of Construction Associated with Storage Tank.
- Grasp the Relevant Types of Storage Tank and their Associated Terminologies.
- Assess Storage Tank Performance.
- Appreciate the Governing Equations Associated with Tank Design.
- Learn about Tank Safety Issues.
- Learn about Tank Standards and Codes.
- Appreciate Failure Mechanisms including Corrosion.
- Learn about methods of Tank Protection, including Linings and Cathodic Protection.
- Have an Understanding of Different Methods of Inspection.

Course Agenda & Outline

DAY 1: Storage Tanks Introduction

- Review of Energy Production and Consumption
- Basic Properties and Characteristics of Petroleum and Products in Storage
- Storage of Flammable Liquids - safety & risk
- Fire Fighting & Fire Protection
- Handling Oils Spills and other Emergencies
- Introduction and Uses of Storage Tanks

DAY 2: Tank Design Standards and Codes

- API Standard 650 Design and Construction of New Storage Tanks
- API Standard 620 Design and Construction of Large, Welded, Low-Pressure Storage Tanks
- API Standard 2610 Design, Construction, Operation, Maintenance and Inspection of Terminal & Tank Facilities
- Types of Tanks, Bolted, Welded, etc.
- Tank Components, Fittings and Equipment
- Tank Roofs, Fixed, Floating, Roof Supports etc.
- Tank Rim and Seals
- Tank Vents & Vacuum Brakers
- Tank Drainage and Water Separation
- Design, Sample Problem of a Heated Tank

DAY 3: Tank Selection and Design

- Tank Selection Criteria
- Tank Capacity & Volume Calculations
- Cylindrical and Spherical Tanks
- Tank Piping Systems, Mixers and BS&W Control
- Double Wall Storage Tank
- Foundations Construction Basics
- Syndicate Exercise - Tank Layout and Spacing

DAY 4: Tank Construction Engineering Considerations

- Materials Selection
- Welding and Welding Inspection
- Design Loading and Selected Tank Equations
- Tank Coatings
- Tank Manufacturing and Assembly
- Tank Damage
- Corrosion Protection, Cathodic Protection, etc.

DAY 5: Inspection and Maintenance

- API Standard 653 - Tank Inspection, Repair, Alteration and Reconstruction
- Nondestructive Inspections
- Tank Failure Case Studies
- Tank Inventory System (TIS)
- Level Measurement Sensors, Techniques and Control
- Course Review and Roundup

With Best Regards From American Global Institute (AGI)