

API 650 and API 653

New and Post Construction Fabrication, Inspection, Repairs and Alterations
- for Engineers, Inspectors and Experienced Operators

5 Days Course

Date: 20 - 24 September 2010

Venue: Concorde Hotel Shah Alam, Selangor



OBJECTIVES

The design requirements of API Standard 650 will be explained and their application demonstrated through example problems. Material, fabrication and erection requirements documentation will also be reviewed. Course participants will gain the knowledge for design of safe and economical storage tanks used in the petroleum and chemical industries. In addition to a general review of API Standard 650, an introduction to tank inspection and evaluation in conformance with API Standard 653 will be included.

WHO SHOULD ATTEND

Inspectors, engineers and experienced operators with technology backgrounds who are involved in the construction, inspection, maintenance and repairs of tanks for safe operations in the plant. Also companies and EPC's from petrochemical plants, refineries, power plants and gas/oil companies.

COURSE INSTRUCTORS & AUTHORS

Will J.Carter, Ph.D., P.E is well versed in the API Codes and Standard. Has 35 plus years professional background in failure analysis, design, repair and construction of process equipment. Expertise in the design, analysis, fabrication, failure investigation, trouble shooting, repair & upgrading of pressure vessel, tanks, pipelines & piping systems. Proven record both within the USA and abroad in the design & maintenance of pressure vessels, aboveground storage tanks, piping systems and pipelines. Active participant on pressure vessel and tank codes & standard Committees and a Registered Mechanical Engineer.

Five Days Course will covered the following Topic:

◆◆ API Standard 650 topics

- Materials
 - * Code Materials, Selection, Rules Allowables etc
 - * Material requirements and the importance of material toughness etc
- Design
 - * Introduction to three methods of shell design
 - ⇒ One-foot method
 - ⇒ Variable design point method
 - ⇒ Elastic shell analysis method
- Design rules for:-
 - ⇒ Tank shells
 - ⇒ Shell openings
 - ⇒ Flush-type fittings
 - ⇒ Tank roofs
- Joint Design
 - ⇒ Roof to Shell Joints
 - ⇒ Floor joints
- Checking tanks for:
 - ⇒ Product loads and internal pressure
 - ⇒ Vacuum conditions
 - ⇒ Wind and seismic loads
 - ⇒ Temperature and heating operations
 - ⇒ Live loads and API load combinations
- Fabrication and Erection
- Inspection and Welding
- Other material application: including stainless steel tanks
- Nondestructive Examination and Testing
- Documentation

◆ API Standard 653 topics

- Type of tank inspections in API-653
- Tank evaluation methods
- Inspection scheduling
- Tank repairs and alterations, including NDE and testing
- Recordkeeping and documentation requirements

◆ Calculations Section and Problem Solving Workshops:

- Shell design calculations and evaluation procedures
- Tank Shell evaluation
- Internal pressure evaluation
- Simple roof evaluation
- Nozzle design criteria and load envelope
- Wind load evaluation
- Seismic load evaluation
- Supported and more complex roof evaluations
- Vacuum load evaluation

Required Code Documents:

All participants must bring the API 650 and API 653 codes to this Class. A course note will be provided on the day 1 of the course.

Organized By:

