API 653 – Aboveground Storage Tank Inspector Exam Preparation Training

Overview:

Velosi is conducting API 653 – Aboveground Storage Tank Inspector Exam Preparation Training online.

The API 653 Above Ground Storage Tank Certification Preparation course is designed to provide individuals with a basic understanding of above-ground storage tank inspection, repair, alteration, and rebuilding. This 5-day training session is meant to provide a thorough overview of the engineering knowledge required for In-Service Storage Tanks, with a focus on the API (Body of Knowledge) syllabus for the stated test.

It contains all of the code parts alluded to by the API 653 committee to the extent that they are required from an inspection standpoint. This preparatory course will define the core purposes of all codes required for study, teach participants how to read code rulings and build confidence in their ability to make decisions.

Learning Objective:

By completing this course, participants will be able to:

- Prepare for the Certification Exam by learning the primary concepts and technical content of the API 653 Code and other reference codes.
- Reduce the risk of inspection delays caused by regulatory requirements by improving management control of storage tank inspection, repair, alteration, and rebuilding.
- Learn the fundamentals of storage tank design (API 650).
- Learn the valuation of tank shell, bottom, and roof integrity.
- Know how to calculate the thickness based on expected or amended design conditions.
- Know the importance of cathodic protection and tank bottom liner.
- Evaluate and decide on a course of action for the Tank settlement.
- Estimate the tank's remaining life and determine inspection intervals.
- Select the right inspection tools and intervals
- Calculations for re-rating, remaining life, and retirement thickness

Who should attend?

The training will be extremely valuable to all maintenance engineers, inspectors, managers, corrosion engineers, plant operation engineers, and design personnel involved in integrity assessments of in-service tanks, repairs and replacement of old tanks, and preventative maintenance of storage tanks and those who want to take API 653 certification examination.

Course Duration

5 Days

Course Outline:

Section 1 - Storage Fundamentals, Design and Construction of a tank (API 650)

- Stress levels that are acceptable Design of the shell, roof design, and bottom design
- Shell thickness calculations, bottom plate thickness, roof plates, and nozzle apertures
- Material selection, API 650 impact test requirements, and impact test results
- API 650 Tank Fabrication, Erection, NDT, and Leak Testing Requirements

Section 2 - Getting to Know the Storage Tank Inspection Code (API 653)

- API 653: Introduction, Scope, Definitions, and Organization
- Inspection intervals and inspection scope
- Roof, Shell, and Bottom data review and corrosion assessment
- API 653 Inspection and Testing Practices, Estimation of Corrosion Rate
- Checking for brittle failure
- Various decomposition-prevention measures
- Inspection frequency and scope, data analysis

Section 3 - Getting to Know the Storage Tank Inspection Code (API 653)

- Storage tank repairs, renovations, and reconstruction
- Tank relocation and re-erection, as well as tank bottom replacement
- Using a hot tap on the tank's shell
- Extensive coverage of material corrosion and degradation (API 571)
- Non-destructive testing (NDT) of tank repairs and leak testing
- Checking for bottom settlement

Section 4 - Inspection of the storage tank (study of other codes and standards)

- Discussions on soil corrosion cathodic protection methods (API RP 651)
- Storage tank inspection techniques that should be followed (API RP 575)
- Discussions on the lining of storage tank bottoms (API RP 652)
- An overview of ASME Section IX and its provisions
- Qualification of welding procedures and welders, as well as case studies of PQR and WPS inspections

Section 5 - Discussions on Corrosion Protection & Quality of Welding

- Discussions on Lining of bottoms of storage tanks (API RP 652)
- Discussions on API RP 577, welding inspection
- Understanding the difference between Inspection and Examination

- Various NDE methods to detect flaws in metals
- Understanding rules imposed by ASME Sec. V for various NDE techniques
- Final examinations Conclusion and Recommendation

Education	Years of Experience	Experience Required
BS or higher in engineering or technology	1 year	Supervision or performance of inspection activities as described in API 653
2-year degree or certificate in engineering or technology	2 years	Design, construction, repair, operation, or inspection of aboveground storage tanks, of which one year must be in supervision or performance of inspection activities as described in API 653
High school diploma or equivalent	3 years	Design, construction, repair, operation, or inspection of aboveground storage tanks, of which one year must be in supervision or performance of inspection activities as described in API 653
No formal education	5 or more years	Design, construction, repair, operation, or inspection of aboveground storage tanks, of which one year must be in supervision or performance of inspection activities as described in API 653