1. Course Details:

Course Code : APIQ-001
Course Title : API 510 Pressure Vessel Inspector Certification Preparatory
Course Duration : 10 Days

2. Course Overview

- Progressive corrosion deteriorates pressure retaining walls to such an extent that there is always a threat of major break down which may lead to fire or some time to explosion. To avoid such accidents API has developed systematic ways to carry out 'In-service Inspection' to determine rate of corrosion and the remaining life of the equipment and piping.

3. Learning Outcomes:

- This program will help industries to continually improve and ensure safety using owner/user or third-party inspectors specialized in pressure equipment. The course thoroughly reviews API Publications such as API-510, API CERT 571, API RP-572, API RP-576, API CERT 577 and API IRE Chapter II.
- Inspectors are certified to inspect refining and petrochemical pressure vessels in accordance with API Standard 510, Pressure Vessel Inspection Code Maintenance, Inspection, Rating, Repair and Alternation.
- The certification program promotes self-regulation and establishes a uniform national program that will assist state and local governments in pressure vessel regulations. Specific examination criteria simulating actual API test conditions will be utilized, providing an effective study base.

4. Course Contents:

- Introduction to API 510 certification
- Introduction to ASME Code System
- Introduction to ASME Sec VIII Div 1
- Design Fundamentals
- Joint Category, Joint Type
- Design of Cylindrical Shells
- Calculations of Vessel MAWP, Part MAWP
- Introduction to External Pressure Calculations
- Impact Testing Requirements
- Pressure Testing – Hydrostatic
- Pressure Testing – Pneumatic
- Review of Practice Exam 1

- Weld size for attachment welds at openings
- Reinforcement of Openings - Concepts
- Reinforcement Pad Calculations
- Typical Weld Joints for Pressure Vessels
- Introduction to API 510 Code: Scope and Applications
- Reference Codes and Standards
- Specific Definitions
- Quality Control Manual
- Certification Requirements
- Corrosion, Fatigue, Creep
- Freeze Damage, Brittle Fracture,
- API 510 (continued…) Defect Inspection
- Minimum Thickness Evaluation
- Pitting Corrosion, Localized Corrosion
- API 510 Inspection Practices
- Corrosion Rate Determination
- MAWP Determination for Vessels In-Service
- External Inspection
- Internal and On-stream Inspection
- Inspection Intervals
- Illustrative Calculations
- Review of Practice Exam 4
- API 510 (continued…) Defect Repairs
- Pressure Tests
- Documentation and Records
- API 510 (Continued.): Welding Requirements
- Weld Overlay and Cladding
- NDT For Repairs and Alterations
- Alterations and Rerating
- Rerating Documentations and Stamping
- Review of Mid-Session Exams
- Introduction to ASME Sec IX
- Procedure Qualification
- PQR Tests and Evaluations of Results
- WPQ Tests and Their Validity
- Detail Road Map for Review of WPS and PQR Documentation
- Case Study For WPS/PQR Review
- Introduction to ASME Sec V: Nondestructive Examination
- Review of Practice Exams 6
- Article 2: Radiographic Examination

- Radiographic Procedure
- Radiographic Technique
- Article 6: Liquid Penetrant Examination
- Selection of Penetrants
- Interpretation and Documentation
- Se – 797 UT Measurements
- Pulse- Echo Contact Method
- Single and Dual Crystal Techniques
- Review of NDE Requirements ASME Sec VIII & API 510
- Review of Practice Exams 7
- Corrosive Components in Crude
- API RP 572 Review
- Construction Standards
- Causes of Deterioration
- Internal Inspection
- External Inspection
- Inspection Record and Reports
- Review of Practice Exams 8
- API RP 576 Inspection of Pressure Relieving Devices
- Types of PRDs
- Causes of Malfunctioning
- Inspection Intervals and Inspection Procedures for PRDs
- Testing of PRDs on Test Bench
- Inspection Records & reports
- Review of Practice Exam 9
- Final Open Book Examination
- Final Close Book Examination
- Feedback on Tests

5. Our Methodology:

- Make coaching and monitoring innovative and using modern
- Media training also using on the go training by using interactive means and focusing on
- The exercises, practical applications and real situations study.
- Live delivery method, instructor-led training.
- Experienced consultant, trainers, and professional.
- Qualified trainer with high-level experience

6. Attendance Reports:

- Send daily attendance reports to trainingdep
- Send full attendance report to training dep. by the end of thecourse
- Attend 100 % from the course days also providedaily
- Issue attendance certificate for participant who attend minimum 80% from the course duration

7. Pre/Post Reports:

- Pre- assessment before starting training.
- Post assessment after finish training
- Full report for the deferent between Pre-& Post assessment

8. Who Should Attend?

- Engineers, Supervisors
- Managers and personnel who are interested in the API 510 program and who wish to present themselves for the Pressure Vessel Inspector Certification examination