

Course Duration : 10 Days Training
Daily Schedule : 7:30am - 3:30pm
Training Date : Upon Request
Training Venue : Doha
Traning Fees : TBI



API 510 Certification Preparation .course outline

Session 1

- Introduction to API-510 Certification.
- ASME code system
- Introduction to ASME SEC. VIII, Div. 1. (UW - 3, 5, 12)

Session 2

- Joint efficiencies
- Design fundamentals (UG- 20, 21)
- Allowable Stresses (UG-23)
- Corrosion (UG- 25)

Session 3

- Design of cylindrical shells (UG- 27)
- Concept of MAWP

Session 4

- Design of Dished heads (UG- 32)
- HW 1 Distribution

DAY 1

Session 1

- HW Discussion
- Summary of Points
- Design of Dish heads (Conical) (UG- 32)

Session 2

- Vessel MAWP, Vessel Part MAWP
- Static head correction
- Max, pressure at any vessel location (UG- 98)

Session 3

- External Pressure Calculations (UG- 28)

Session 4

- Pressure testing - Hydrostatic
- Pressure testing - Pneumatic (UG-99, 100, 102)
- HW Distribution

DAY 2

Session 1

- HW Discussion
- Summary of Points
- Impact testing requirements (UCS- 66, UG- 84)

Session 2

- Weld size for attachment welds at openings. (UW- 16)

Session 3

- Reinforcement of Openings-Concepts
- Reinforcement pad Calculations
- Typical weld joints for Pressure Vessels (UG- 36, 37 40)

Session 4

- Restrictions on joints - mismatch tolerances (UW- 33)
- Allowable Reinforcements (UW- 35)
- Inspection requirements for Pressure Vessels
- Heat treatment Code stamping and Data reports (UCS- 56, UW- 50,51,52)
- HW Distribution

DAY 3

Session 1

- HW Discussion
- Summary of Points
- Introduction to API-510 code – Scope & Applicatn reference Codes and Standards
- Specific definitions (Sec. I,II,III)

Session 2

- API-510 contd. Inspection Organizations (Sec. IV)
- Owner - User responsibilities API-510 Inspection practices (Sec. V)

Session 3

- Modes of deterioration-Chemical corrosion
- Fatigue, Creep, Brittle failure,
- Temper embrittlement (API 5.2)

Session 4

- Corrosion rate determination
- MAWP determination for Vessels in service
- API-510 contd. Defect inspection (API 5.4)
- HW Distribution

DAY 4

API 510 Certification Preparation .course outline

Session 1

- HW Discussion
- Summary of Points
- Inspection of parts
- Minimum thickness Evaluation
- Numerical Examples (API 5.6, 5.7)

Session 2

- API-510 Contd.... External inspection
- Internal and on-stream inspection
- Inspection interval
- Remaining service life
- Illustrative calculations (API 6.3, 6.4)

Session 3

- API-510 contd... Repairs and alterations
- Welding requirements
- Pre-heating and PWHT
- Weld overlay and cladding (API 7.0)

Session 4

- Pressure tests
- NDE requirements.
- Design aspects
- Alterations and
- Re-rating documentation and stamping
- HW Distribution (API 7.0)

DAY
5

Session 1

- Mid-Session Exam (Open Book)

Session 2

- Mid-Session Exam (Open Book)

Session 3

- Brief on SEC. IX
- Note on Welding Process (SMAW, GMAW, GTAW, SAW)
- Article 1- General Requirements
- Article 2- PQR
- Article 3- WPQ
- Article 4- Variables

Session 4

- WPS/PQR documentation
- Step by step instructions & review to prepare WPS/PQR
- HW Distribution

DAY
6

Session 1

- HW Discussion
- Summary of Points
- Detailed road-map for review of WPS/PQR documentation
- Case Studies for WPS/PQR review

Session 2

- ASME Sec. V Nondestructive Examination
- Article 1: General Requirements
- Article 2: Radiographic Examination

Session 3

- Article 6: Liquid Penetrant Examination
- Article 7: Magnetic particle Examination

Session 4

- Review of NDE Requirements
- ASME Sec VIII Div 1 & API 510 Acceptance Standards
- HW Distribution

DAY
7

Session 1

- HW Discussion
- Summary of Points
- API RP-572 review
- Types of Pressure Vessels
- Construction Standards
- Causes of deterioration

Session 2

- Internal inspection
- External inspection
- Inspection records and reports

Session 3

- API RP-576 Inspection of Pressure relieving Devices
- Types of PRDs
- Causes for malfunctioning

Session 4

- Inspection intervals & insp. procedures for PRDs,
- Testing of PRDs on test bench.
- Inspection records & reports
- HW Distribution

DAY
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QATAR TECHNICAL PETROLEUM CENTER

API 510 PRESSURE VESSEL INSPECTOR

QTPC - AN ISO 9001:2008 Regd.



API 510 Certification Preparation .course outline

Session 1

- HW Discussion
- Summary of Points
- Safe Entry Rules
- Definitions
- Work Permit System
- Attendant-functions & responsibilities.

Session 2

- API 577 – Welding Inspection & Metallurgy

Session 3

- Cont'd...
- API 577 – Welding Inspection & Metallurgy
- API 571 – Damage Mechanism

Session 4

- Cont'd...
- API 571 – Damage Mechanism
- HW Distribution

DAY
9

Session 1

- HW Discussion
- Summary of Points
- Mockup Exam (open book)

Session 2

- Mock up exam (open book) contd.

Session 3

- Mockup Exam (close book)

Session 4

- Mockup Exam (close book) contd.
- Tips before taking Exam
- Feedback / Conclusion

DAY
10

About the Instructor



Mr. Joshi Diwakar Damodar

Educational Qualifications:

PRE.PROF.ENGG., B.E.MECHANICAL

ADDITIONAL / INDUSTRIAL TRAINING & EDUCATION TRAINING

- API 510 Pressure Vessel Inspector
- API 653 Above ground Storage Tank
- API 570 Authorized Piping Inspector
- NDT Examiners Workshop
- ASNT Level III
(Basic + RT+ UT + MT+ PT +ET+ LT+VT)
- RWTUV Level III (PT + MT + UT + RT)
- American Welding Society –
Senior Certified Welding Inspector
- ISO 9000 Lead Assessor Training and Exam
- Training in Membrane cell project
- QA / QC aspect in Titanium Fabrication
- Radiographic Interpretation
- Site – In – charge Radiation Safety course

Professional Experience:

- Self – Insight Quality Services, • Physia Consulting, Saudi Arabia, • PT. Blacke Durr, Indonesia
- PT. Puspetindo, Indonesia, • Alfa Laval (India) Ltd., India, • Western India Erectors India
- Walchandnagar Industries Ltd. India

Working area

a. At Insight Quality Services (1994 onwards)

Promoted a Consultancy firm ' Insight Quality Services' and started rendering, Quality Services in Training, Consultancy (@ 300 Nos.) and Inspection.

Activities Completed so far

- RT , UT, MT, PT, LT, ET, VT – Level I + Level II + Level III (Preparatory)
- Basic Level III (Preparatory) course
- Welding Inspector (AWS/ISNT Syllabus) courses – India and abroad
- Internal Auditing (ISO 9000) course
- NDT Awareness, NDT for Designers and ASME Awareness,
- Consultancy, Training and Inspection in Welding & NDT areas as per customer requirements
- Guided Tour of ASME Codes
- Trained and certified more than 1500 NDT technician who are working in different organizations in India and abroad
- Developed NDT Written Practices as per SNT-TC-1A for different organizations in India and abroad and NDT procedures as per ASME requirements (about 100 procedures completed)
- ISO 9000 certification preparatory work for different organizations in India and abroad.
- Worked at middle-east countries at off-shores for Petroleum industries

INSTITUTE

API
API
API
ISNT – Pune (India)
ASNT, USA, Bombay, Madras, Hyderabad

RWTUV

American Welding Society

BATALA, , UK (Bombay , India)
By UHDE west Germany (at Pune)
Titanium Fabricators Ltd.Sheffield, UK
WRI Abington, Cambridge U . K.
B. A. R. C. Bombay (India)



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About the Instructor

b. PT . Puspetindo, Indonesia (1992 – 1994)

Pressure Vessels & Heat Exchanger Company & PT. Balcke-Durr, Indonesia in 1997 & 1998.
(Manpower handled Technical Staff @ 50)

I was working as a ' QA Consultant' and NDT level III

I was responsible for

- Streamlining the Quality Systems in the organization
- Training of QA / QC inspectors, engineers , managers, NDT personnel
- Preparation of ASME Shop Certification (U + U2)
- Preparation of QA manual and Procedures / system in line with ISO 9000 (certification completed in November, 1993
- Technical guidance for QA / QC staff
- Training for internal Auditors for Quality System Audit
- Help for Inspection co-ordination of Pressure Vessels and Heat Exchangers with customer / third party inspectors
- NDT Level – III for Company

c. Alfa Laval India Ltd. (1983 – 1992)

Alfa Laval (India) Ltd. is a multinational company involved in manufacturing of Dairy, Brewery, Veg. Oil Turnkey Projects and Fabrication of special metals like Ti, Ni, Hastalloy, Incoloy and all types of stainless steels for chemical refineries. (Manpower handled 10 engineers, 30 inspectors).I was working as a Manager (Quality Assurance).

I was responsible for

- Comments of drawings. Quality plans for premarketing requirements
- Quality plan for incoming jobs and their approvals
- Material incoming inspection
- WPS / PQR / WPQ Qualification and approval
- Stage Inspection
- D. T. and NDT (including RT+UT +PT+ MT+ LT+ VT)
- Vendor inspection, and certification of the equipment, co-ordination with third party inspection agencies
- Developing Inspection and NDT procedures
- Customer complaints, feed back, corrective action
- Quality Audit
- ISO 9000 Co-ordination
- Quality improvement
- Documentation

d. Western India Erectors Ltd. Pune – India (1981 – 1983)

W.I.E. is an Erection company involved mainly in Thermal Power Projects Erection Work.

(Man power handled 5 sites & 2-3 NDT operators at each site)

I was working as a Senior Engineer (Welding and Inspection)

I was responsible for

- Inspection work of structural fabrication at site
- Material Identification, Welding Procedure, Performance Qualification work
- Stages and final inspection and records
- Training of welder and IBR qualification (Indian Boiler Regulation)
- NDT (PT+ UT+ RT) at site



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e. At Walchandnagar Industries Ltd. Walchandnagar, India (1976-1981)

WIL is a reputed concern, manufacturing sugar plants, cement plants, Boilers, Gear boxes, Pressure Vessels, Heat Exchanger and more sophisticated equipments required for Atomic Energy Projects and Space Science Projects. (Manpower handled 20 operators, 2 engineers) I was working as a Sr. Engineer Quality Control

I was responsible for

- Preparation of inspection check-lists & inspection procedures for Nuclear components
- To carry out & co-ordinate inspection activities from material identification to despatch stage
- To co-ordinate LRIS, BV, EIL, IBR, TCE, SLV, PPED, visits (third party inspectors)
- Preparation of Quality plans
- WPS / PQR / WPQ qualification and approval by third party inspectors
- Welding destructive testing, tensile, bend, hardness chemical etc.
- NDT RT, UT, PT& MT, making test procedures and certifying the tests
- Training of Inspectors and NDT personnel (SNT-TC-1 A Norms)

IMPORTANT ASSIGNMENTS COMPLETED

Promoted a Training, Consultancy and Inspection setup in 1994 (Insight Quality Services) which renders these services in India and abroad.

The major assignments completed are as given below :

- Completed UT Level I/II and VT Level I/II training and certification in line with SNT-TC-1A 1996 for I. C. Technology, Bahrain in March-April, 2000
- Completed an assignment for shutdown inspection of Urea / Amonia Plant in April, May – 1999 in Saudi Arabia
- Worked as a QA/QC co-ordinator for Balcke-Durr, Indonesia for their Mobil Oil (USA) project with Toyo Japan and Tripatra Indonesia. There were 20 pressure vessels manufactured in CS, SS and Clad steels under ASME U/U2 stamps. (1997 – 6 months , 1998 - 4 months)
- Completed inspection and expediting work for 4 Nos. Re-boilers for SPL India Ltd. Delhi (Applicable code ISO / R831)
- Planned and executed Pressure Vessels and Heat Exchangers inspections activities including critical NDT Testing with full satisfaction of customers like Petrokimia Gresik Indonesia, IKPT, Mobil Oil (USA) and consultants like M/s Kellogg (USA), Toyo (Japan) and Rekayasa (Jakarta), while working as a QA consultant in PT. Puspetindo, Indonesia (1992-1994)
- Initiated and scheduled ASME Certification program (U+U2 stamps) for PT. Puspetindo, with proper in housing training and drafting QC manual.
- Conducted Internal Quality Audits for PT. Puspetindo, Gresik Indonesia in line with ISO 9001 requirements. In April, June, Sept. November, 1993 and April 94. In process, trained and prepared a team of Quality System Auditors
- Initiating, planning, Executing and Satisfactorily completing the ISO 9001 Certification Project for PT. Puspetindo which includes drafting and aligning all the systems and procedures in line with ISO 9001, Drafting QA manual and training, implementation and internal auditing. Project completed with recordable short time of 10 months (completed in November, 1993).
- The following training courses were completed in PT. Puspetindo,
 - Level I /II in RT, PT,UT, MT, VT
 - Welding Inspection
 - ISO 9000 Awareness
 - ISO 9000 Auditing
- Worked as a Level III for L & T-Niro, Baroda -India , PT. Puspetindo, Indonesia, Millipore, Bangalore – India, GEI Hamon, Bhopal – India & Jord Engineers India Ltd., Baroda – India

MEMBERSHIP OF PROFESSIONAL INSTITUTES

- Membership of ASNT (USA)
- Member of British Society for NDT (UK)
- Life Member of Indian Society for NDT , India
- And Hon. Secretary of ISNT Pune Chapter & member of NCB (National Certification Board)
- Member of American Welding Society (USA)
- Member of Singapore Welding Society, Singapore