HI-TECH NDT TRAINING, CONSULTANCY AND SERVICES

ASNT Corporate Partner

INDIA

About US

HI-TECH NDT Training Institute is an industry oriented training center which recognizes the importance of the well trained man power in effective implementation of appropriate nondestructive testing techniques, Welding Inspection, API Inspection. This institute caters to training requirements of engineers, supervisors, Welders, Fresh Technical Student & NDT operators in the field of Manufacturing and In service Oil & Gas.

The faculty consists of well-qualified and experienced personnel.
Rajesh G. Ahire, ASNT Level-III (UT, RT, PT, MPT) , API Inspector and PCN/ISO/EN Level-2

Having more than 14 Years' Experience in NDT , Welding inspection, API Inspection and as Trainer.

Training Courses we Offers:

- **ASNT NDT LEVEL-2 & 3**
- **API 510 (Authorize Pressure Vessel inspector)**
- **API 570 (Authorize PIPING inspector)**
- **API 653 (Authorize Above Ground Tank inspector)**
- **AWS CWI**
- **CSWIP**
- **ISO 9001 : 2015 (Internal & Lead Auditor Course)**

Training Courses to be conducted at Ghana :

API 510 - Pressure vessel Inspector

API 570 – Piping Inspector

API 653 - Aboveground Storage Tank Inspector

API 580 – Risk based Inspection (full API 580 STD)

Objectives :

Complete Solution to compete exam and to perform on ground inspection.

Minimum Qualification and Experienced :

For eligibility of certification examination of API please visit api.org (http://www.api.org/certification-programs/icp/programs)

Any inspector, engineer or other professional across the entire petrochemical industry can obtain the API

570 Piping Inspection knowledge and plan for certification as a validation of his/her profound knowledge of the subject.

Course Objectives :

1. Understand concepts and principles of API Inspection
2. Be able to understand the Inspection requirements
3. Be able to carry out, co-ordinate, monitor or control the inspection activity based on the learning
4. Be able to gain a broad based knowledge of all related codes

Who Should Attend :

- Refining and Petrochemical Engineers and Inspectors
- Plant Engineers, Non-Destructive Testing Engineers, Materials and Corrosion Engineers, Plant Inspectors responsible for managing the integrity of ageing process equipment, pipelines, boilers and storage tanks.
- Maintenance Personnel, operations supervisors, and process specialists who are expected to make decisions regarding the suitability of equipment for continued service.
- A working knowledge of base equipment is recommended

Why You Should Attend :

API has provided quite a few inspection codes for in-service inspection for many years now. API 510 - Pressure Vessel Inspector, API 653 - Above Ground Storage Tank Inspector, API 570 – Piping Inspector are a few examples.

This course presents a comprehensive and practical introduction and application of latest techniques to gain an insight of Piping Inspection. The careful design of the course ensures that every candidate is focused on and learns. The question and answers and the mock tests guarantee a better understanding of the syllabus.

Course Overview :

This course is designed to maximize your success in passing the API Piping Inspector Certification

Examination by teaching you to:

(a) Understand what the API Body of Knowledge requires exam candidates to know

(b) Efficiently reference the API and ASME Codes during the API ICP examination

(c) Complete all calculations required of exam candidates during the API ICP examination

Course outline: API 570

Session	Day 1	Day 2	Day 3
Session 1	• Welcome & Introduction • Benchmark • Certification & Exam Information	• HW Discussion • Summary of Points • Introduction to API 570	• HW Discussion • Summary of Points API 570 • Chapter VIII
Tea Break			
Session 2	• Introduction to Piping Code B31.3 • Chapter I	API 570 • Chapter V	• ASME B 16.5
Lunch Break			
Session 3	B31.3 • Chapter III • Chapter IV	API 570 • Chapter V continued • Chapter VI	• API 574
Tea Break			

Session 4	B31.3 • Chapter V continued • Chapter VI	API 570 • Chapter VII • Chapter VIII	• API 574 continued • HW Distribution

Session	Day 4	Day 5	Day 6
Session 1	• HW Discussion • Summary of Points • API 578	• HW Discussion • Summary of Points • ASME Section IX	• Mockup Exam (open book)
Tea Break			
Session 2	• API 571	• ASME Section V	• Mockup Exam (open book)
Lunch Break			
Session 3	• ASME Section IX	• ASME Section V Continued….	• Mockup Exam (close book)
Tea Break			
Session 4	• ASME Section IX Continued….	• API 577	• Mockup Exam (close book)

Course Outline: API 510

DAY 1	DAY 2	DAY 3
Session 1 • Introduction to API-510 Certification. • ASME code system • Introduction to ASME SEC. VIII, Div. 1. (UW- 3, 5, 12)	Session 1 • Homework Discussion • Summary of Points • External Pressure Calculations (UG- 28) • Pressure testing –	Session 1 • Homework Discussion • Summary of Points • Introduction to API-510 code – Scope & Application reference Codes and Standards Specific definitions
Session 2 • Joint efficiencies • Design fundamentals (UG-20, 21) • Allowable Stresses	Session 2 • Impact testing requirements (UCS- 66, UG- 84)	Session 2 • Modes of deterioration- Chemical corrosion Fatigue, Creep, Brittle failure, Temper embrittlement (API
Session 3 • Design of cylindrical shells (UG- 27) • Concept of MAWP • Design of Dished Heads (UG- 32) • Design of Dish heads (Conical) (UG- 32)	Session 3 • Weld size for attachment welds At openings. (UW-16) Reinforcement of Openings- Concepts Reinforcement pad Calculations Typical weld joints for Pressure Vessels (UG- 36, 37 40)	Session 3 • Corrosion rate determination • MAWP determination for Vessels in service • API-510 contd ..Defect inspection (API 5.4) • Inspection of parts Minimum thickness

Session 4 • Vessel MAWP, Vessel Part MAWP • Static head correction • Max, pressure at any • Vessel location (UG- 98) • Homework Distribution	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) • Homework Distribution	Session 4 • Numerical Examples (API 5.6, 5.7) • External inspection • Internal and on-stream inspection • Inspection interval • Remaining service life • Illustrative calculations (API 6.3, 6.4) • Homework Distribution

DAY 4	DAY 5	DAY 6	DAY 7
Session 1 Repairs and alterations • Homework Discussion • Summary of Points • Welding requirements	Session 1 • Homework Discussion • Summary of Points • WPS/PQR documentation • Step by step instructions	Session 1 • Homework Discussion • Summary of Points • Internal inspection • External inspection • Inspection records and reports	Session 1 • Summary of Points • Mockup Exam (open book)

Session 2 • Mid-Session Exam (Open Book)	Session 2 • ASME Sec. V Nondestructive Examination • Article 1: General Requirements • Article 2: Radiographic Examination	Session 2 • API RP-576 Inspection of Pressure relieving Devices • Types of PRDs • Causes for malfunctioning Inspection intervals & insp. procedures for PRDs	Session 2 • Mock up exam (open book)
Session 3 • Mid-Session Exam (Close Book)	Session 3 • Article 5: Ultrasonic Examination • Article 6: Liquid Penetrant Examination • Article 7: Magnetic particle Examination	Session 3 • Safe Entry Rules • Definitions • Work Permit System Attendant-functions & responsibilities. • API 571 – Damage	Session 3 • Mockup Exam (close book)
Session 4 • 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 • Homework Distribution	Session 4 • API RP-572 review • Types of Pressure Vessels • Construction Standards • Causes of deterioration • Homework Distribution	Session 4 • API 577 – Welding Inspection & Metallurgy • Homework Distribution	Session 4 • Mock-up Exam (close book) contd. • Tips before taking Exam • Feedback / Conclusion

COURSE OUTLINE : API 653

Session	Day 1	Day 2	Day 3
Session 1	• Welcome & Introduction • Benchmark • Certification & Exam Information	• HW Discussion • Summary of Points API 650 • Section 6, 7,8 and	• HW Discussion • Summary of Points API 653 • Section 5, 6
Tea Break			
Session 2	• Introduction to API 650	API 653 • Section 1, 2, 3,	API 653 • Section 7, 8
Lunch Break			
Session 3	API 650	API 653	API 653
Tea Break			
Session 4	API 650 • Section 4, 5 • HW Distribution	API 653 • Section 4- Cont'd • HW Distribution	API 653 • Section 10, 11, 12, 13 and Appendices • HW Distribution

Session	Day 4	Day 5	Day 6
Session 1	• HW Discussion • Summary of Points • API 575	• HW Discussion • Summary of Points API 577 &	• HW Discussion • Summary of Points • Mockup Exam (open book)
Tea Break			
Session 2	• API 575 Cont'd…	• ASME Section IX	• Mock up exam (open book) contd.
Lunch Break			
Session 3	• API 651	• ASME Section V	• Mockup Exam (close book)
Tea Break			
Session 4	• API 652 • HW Distribution	• ASME Section V • HW Distribution	• Mockup Exam (close book) contd.

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