CSWIP Plant Inspection Programme – Levels 1, 2 and 3

An internationally recognised certification of competence

Introduction

The **modular approach** of this **internationally recognised certification** of competence allows for a **clearly defined structured career path**.

The courses are aimed at plant engineers, integrity engineers welding/NDT inspectors/ practitioners, materials and corrosion engineers, plant inspectors responsible for managing the safety and integrity of ageing process equipment, pipelines, pressure vessels and storage tanks.

The scheme is designed to suit:

- plant inspectors working for manufacturing works (Vendor)
- inspection organisations
- equipment owners and operators
- classification societies
- insurance companies
- safety regulators

The courses have three goals:

- To ensure inspectors and engineers responsible for assessing plant integrity have the essential tools and skills necessary
- To recognise and certify plant inspector competence
- To provide a structured career path for continuing professional development of plant integrity practitioners through formal training/certification

LEVEL 1
Entry Requirements (submit CV for approval)

Direct Entry Route
Must hold current ISO 9712 Level 2 NDE approvals in 2 methods AND CSWIP 3.1 Welding Inspection qualification

NDT Route

Via Offshore Visual Inspector course
Supplementary S1 module

Welding Inspector Route

NDT Appreciation course
Supplementary S2 module

Mature Candidate Route
Five years' Plant Inspection experience

Module 1 – Part A
Rules/Regulations and Duties of a Plant Inspector

5 days inc. examination

- Legislation, rules and regulations
- An introduction to engineering materials, NDT, visual examination of welds
- The Plant Inspector – roles and duties, works inspection/ISI/FFP, inspection safety, basic inspection skills, using codes and standards, inspection reports
- ITPs
- Inspecting materials

Module 1 – Part B
Inspection Methods

5 days inc. examination

- Use of codes and standards
- An introduction to: the inspection of pressure equipment, vessel, piping, storage tanks, coating and lining
- An introduction to: risk-based inspection
- Inspection reports

Exam format
Level 1 examination for Module 1 Part A and B consist of two examination papers.
Paper 1 – multiple choice questions
Paper 2 – extended case study

On successful completion of the CSWIP Examination Plant Inspection Level 1 is awarded

LEVELS 2 and 3
Entry Requirements (submit CV for approval)

Direct Route
Must hold a current CSWIP Plant Inspector Level 1 qualification

Academic Route*

- HNC or above qualification in a relevant engineering subject
- Must meet CSWIP Plant Inspector Level 1 entry requirements

Mature Candidate Route*

- HNC or above qualification in a relevant engineering subject
- Minimum of five years' Plant Inspector experience

* Must gain CSWIP Plant Inspector Level 1 Part A to be awarded certification

Module 2
Damage Mechanism Assessment for RBI and FFS based on API RP 571

3 days inc. examination

- Common damage mechanisms in oil and gas production, refining and manufacturing processes and where they can be found
- Key process parameters affecting damage mechanisms
- Prevention and control of damage mechanisms
- Most appropriate inspection and non-destructive testing methods

Exam format
Paper 1 – multiple choice questions
Paper 2 – essay questions, case studies.
(Open book – API 571 – provided)

Module 3
Risk Based Inspection (RBI) based on API and ASME

2 days inc. examination

- Risk based inspection in accordance with API RP 581, API RP 580 and ASME
- Reasons for implementing risk based inspection
- Benefits of using risk based inspection
- Practical planning and implementation of RBI
- Preparing inspection plans

Exam format
Paper 1 – multiple choice questions
Paper 2 – case studies questions
(Open book API 580/581 – provided)

Module 4
Fitness-for-Service (FFS) based on API 579-1/ASME FFS-1 – 2007

4 days inc. examination

- Introduction to fitness-for-service (FSS)
- Material properties and API 579 annexes
- Stress analysis for FFS
- Identification of damage mechanisms for FFS:
- Interaction with other assessment procedures

Exam format
Paper 1 – multiple choice questions
(Open book API 571/API 579 – provided)

Module 5
Repair of Pressure Equipment Weld and Piping

1 day inc. examination

- Selecting an appropriate repair method
- Life of weld repair
- Type of equipment and industry
- Codes and standards to make weld repairs or alterations
- Use of weld procedures and welder qualifications

Exam format
Paper 1 – multiple choice questions

Module 6
Pressure Vessel Inspection based on API RP 510

5 days + 1 day examination

- Extensive overview of API 510 "Body of Knowledge"
- Pressure vessel materials and fabrication
- Corrosion allowances, inspection and degradation mechanisms
- Remaining life calculations
- Static head pressure calculations

Exam format
Paper 1 – multiple choice questions
(Open book API 510)**

Module 7
Piping Inspector based on API API RP 570

5 days + 1 day examination

- Extensive overview of API 570 "Body of Knowledge"
- ASME welding requirements for pressure piping
- Corrosion allowances, inspection and degradation mechanisms
- Remaining life calculations

Exam format
Paper 1 – multiple choice questions
(Open book API 570)**

Module 8
Aboveground Tank Inspector based on API RP 653

5 days + 1 day examination

- Extensive overview of API 653 "Body of Knowledge"
- Review of ASME welding requirements for storage tanks section IX and API 650
- AMSE NDT principles of Section V
- Review of API 653 inspection, repair, alteration and construction of tanks.

Exam format
Paper 1 – multiple choice questions
(Open book API 653)**

On successful completion of FOUR CSWIP modules CSWIP Plant Inspection Level 2 is awarded

On successful completion of SIX CSWIP modules CSWIP Plant Inspection Level 3 is awarded

The Welding Institute

Prospective eligibility for Professional Membership at Technician Level (TechWeldI) – application required

**Candidates to bring relevant API standard