

## JOB AND TASK DESCRIPTION

1. Plant inspection is an in-service phase of equipment inspection, rating, repair, alteration and reconstruction of hydrocarbon and chemical processing plant to assure the integrity and determine the service life of the equipment for further safe operation. This includes:
  - a. pressure vessel,
  - b. process piping, and
  - c. aboveground storage tank.
2. The Plant Inspectors are responsible to the owner/user to assure that the inspection, NDT, repairs, and pressure testing activities meet the specific code, standard, or other document.
3. The Plant Inspectors shall be directly involved in the inspection activities, especially visual inspections, which in most cases will require field activities to ensure that procedures and inspection plans are followed.
4. The Plant Inspector shall review, evaluate and accept all NDT results conducted by examiner and visual inspection reports conducted by assistant Plant Inspectors.
5. The Plant Inspectors shall make appropriate recommendations for repairs, replacements, or fitness for continued service.

## LEVEL OF CERTIFICATION

1. Assistant Plant Inspector

Assistant Plant Inspector must have a broad knowledge and skills relating to visual inspection and equipment to be inspected as described in API 572, API 574 or API 575.

2. Plant Inspector

- a. Pressure Vessel Inspector

- i. Pressure Vessel Inspector must have a broad knowledge relating to maintenance, inspection, repair, and alteration of pressure vessels as described in API 510.
- ii. Pressure Vessel Inspector must have the skills in the application of rules and recommended practices contain in the reference documents in Table 1 listed as Parts A and B.

- b. Process Piping Inspector

- i. Process Piping Inspector must have a broad knowledge relating to maintenance, inspection, alteration and repair of in-service metallic piping systems as described in API 570.
- ii. Process Piping Inspector must have the skills in the application of rules and recommended practices contain in the reference documents in Table 1 listed as Parts A and C.

c. Aboveground Storage Tank Inspector

- i. Aboveground Storage Tank Inspector must have a broad knowledge relating to tank inspection, repair, alteration and reconstruction of aboveground storage tanks as described in API 653.

**Table 1: Plant Inspectors Competency Requirements**

No	Reference Documents	Subject	Competency		
			Pressure Vessel	Process Piping	Aboveground Storage Tank
Part A					
1	API 571	Damage Mechanisms Affecting Fixed Equipment in the Refining Industry	X	X	X
2	API 576	Inspection of Pressure-Relieving Devices	X	X	X
3	API 577	Welding Inspection and Metallurgy	X	X	X
4	ASME V	Nondestructive Examination, Articles 1, 2, 6, 7, 9, 10 and 23 (SE 797)	X	X	X
5	ASME IX	Qualification Standard for Welding Procedures, Welders and Welding Operators	X	X	X
Part B					
1	API 510	Pressure Vessel Inspection Code: Maintenance Inspection, Rating, Repair, and Alteration	X		
2	API 572	Inspection of Pressure Vessels	X		
3	API 578	Guidelines for a Material Verification Program for New and Existing Assets	X		
4	ASME VIII, Div. 1	Rules for Construction of Pressure Vessels	X		
Part C					
1	API 570	Piping Inspection Code: Inspection, Repair, Alteration, and Rerating of In-Service Piping Systems		X	
2	API 574	Inspection Practices for Piping System Components		X	
3	API 578	Guidelines for a Material Verification Program for New and Existing Assets		X	
4	ASME B16.5	Pipe Flanges and Flanged Fittings		X	
5	ASME B31.1	Process Piping		X	
Part D					
1	API 575	Inspection of Atmospheric and Low-Pressure Storage Tanks			X
2	API 650	Welded Tanks for Oil Storage			X
3	API 651	Cathodic Protection of Aboveground Petroleum Storage Tanks			X
4	API 652	Lining of Aboveground Petroleum Storage Tank Bottoms			X
5	API 653	Tank Inspection, Repair, Alteration, and Reconstruction			X

- ii. Aboveground Storage Tank Inspector must have the skills in the application of rules and recommended practices contain in the reference documents in Table 1 listed as Parts A and D.

d. Specialist Plant Inspector

- i. Damage Mechanism

Specialist Plant Inspector in Damage Mechanism must have a broad knowledge and skills to describe and analyse each flaw and damage found by Plant Inspector as described in API 571.

i. Risk Based Inspection

Specialist Plant Inspector in Risk Based Inspection must have a broad knowledge and skills to develop, implement and maintain a Risk Based Inspection (RBI) program as described in API 580.

i. Fitness for Service

Specialist Plant Inspector in Fitness for Service must have a broad knowledge and skills to assess structural integrity of equipment containing identified flaws or damages for continuous operation and maintenance optimization as described in API 579-1.

## PRE-REQUISITE

1. Assistant Plant Inspector

To qualify for Assistant Plant Inspector certification examination, the applicant's shall hold a valid certification in Visual Inspection, Welding Inspection or Painting Inspection from any nationally or internationally recognized certification scheme.

2. Plant Inspector

a. To qualify for Plant Inspector certification examination, the applicant's education and experience, when combined, shall be equal to at least one of the following:

- a. a Bachelor of Science degree in engineering or technology, plus one year of experience in supervision of inspection activities or performance of inspection activities,
- b. a two-year degree or certificate in engineering or technology, plus two years of experience in the design, construction, repair, inspection, or operation of pressure vessels, of which one year must be in supervision of inspection activities or performance of inspection activities,
- c. a high school diploma or equivalent, plus three years of experience in the design, construction, repair, inspection, or operation of pressure vessels, of which one year must be in supervision of inspection activities or performance of inspection activities, or
- d. a minimum of five years of experience in the design, construction, repair, inspection, or operation of pressure vessels, of which one year must be in supervision of inspection activities or performance of inspection activities.

b. The applicant documents required include a listing of all educations, relevant work and employment. The documents shall include:

- a. an education background with relevant supporting documents,
    - b. a listing of all relevant employers and their contact information when available,
    - c. the nature of the work performed, the dates of employment, and
    - d. a letter of verification from the employer or client.
  - c. The educations, relevant work and employment documentation is subject to verification by Certification Department and false information is caused to reject the application and can disqualify the applicant from examination to become a Plant Inspector.
3. Specialist Plant Inspector

To qualify for Specialist Plant Inspector certification examination, the applicant shall hold a valid IPCS Pressure Vessel Inspector, Process Piping Inspector or Aboveground Storage Tank Inspector.

## **QUALIFICATION ASSESSMENT**

1. The applicant shall fulfil the minimum requirements of pre-requisite, training, experience, examinations and vision prior to certification.
2. The applicant shall provide documentary evidence, acceptable to RSA, the following:
  - a. pre-requisite requirements,
  - b. satisfactorily completed training,
  - c. experience, and
  - d. recent vision test.
3. Certification Department shall verify the examination grades given by the Examination Department.

## **CERTIFICATION VALIDITY**

Certification becomes effective from the date of completion of the initial examination and shall be valid for three (3) years unless revoked for reasons defined in Sections 18.0 and 20.0.

## CONDITION OF CERTIFICATION

The period of validity shall commence (date of issue of the certification) when all of the requirements for certification (pre-requisite, training, experience, satisfactory vision test, success in examination) are fulfilled. Certification becomes invalid:

- a. at the discretion of RSA, e.g. after reviewing evidence of behaviour incompatible with the certification procedures or failure to abide by a code of ethics,
- b. if the inspector becomes physically incapable of performing his duties based upon failure of the visual acuity examination taken annually under the responsibility of his employer,
- c. if the inspector has not been performing plant inspection activities for a period of one (1) year or more during the certification period, and
- d. if the inspector fails recertification, until such time he/she meets the requirements for recertification or initial certification.
- e. if examination or certification fees are not paid when due.

