Visual Testing
Level I and II
Training Course Outline
24 hours (3 days)

SCOPE

This in-depth course prepares a candidate to conduct Visual Examinations.
This course prepares a candidate to

- Setup and calibrate equipment
- Interpret and Evaluate Results with respect to Applicable Codes, Standards and Specifications
- Familiar with the scope and limitations of the Methods

Write test reports

TRAINING

GENERAL TRAINING
The course curriculum includes:

Vision and Illumination

- Definition of Visual Testing
- Vision
- Lighting and its measurement – Photometry, lux
- Color

Optical Tools

- Magnifiers
- Videoscopes, fiberscopes and borescopes
- Field of View and Depth of View

Manufacturing Processes

- Inherent and Processing Discontinities
- Casting and its defects
- Forging, rolling, drawing and defects
- Surface Texture

In-Service Defects

- Fatigue
- Corroison
- Wear

Welding

- Expectations of a weld
- Welding terms
- Welding processes: SMAW, GTAW, GMAW, & FCAW
- Welding codes: ASME, AWS, API and NBIC
- Welding filler materials (F and A numbers)
- Base materials (P numbers)
- Weld nomenclature (parts of a weld)

- Welding joints
- Welding symbols
- Welding defects: Their causes, detection, repairs, and prevention
- Inspection acceptance criteria: ASME and AWS
- What is the purpose of a visual welding inspector
- Weld inspection tools: Fillet weld gage, high-low gage, stud weld test gage, etc.
- Heat treatments

Pumps and Valves
Bolting

SPECIFIC TRAINING
Visual Inspection Codes

- AWS D1.1(steel), D1.2 (Aluminum)
- ASME Section I, V, VIII, 31.1, 31.3

PRACTICAL TRAINING
Evaluate defects in Weld Samples

EXAMINATIONS

- General
- Specific
- Practical

Candidates must score a minimum of 70 % in each test and a minimum of 80% average for all the three tests.

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