

Eddy Current Testing

Level II Course Outline

SCOPE

This course covers ECT probes, ECT Instrumentation and prepares an inspector to perform Tubing Inspections

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

Electromagnetic Theory

- Eddy Current Theory
- Types of Eddy Current sensing probes

Factors that affect Coil Impedance

- Test part
- Conductivity
- Permeability
- Thickness

Test system

- Frequency
- Coupling
- Field strength
- Test coil and shape

Probes Design

- Surface Inspection Probes
- Tube Inspection Probes

Non Ferromagnetic Tubing Inspection- Conventional ECT

- ASME Calibration Standard
- Bobbin Probe
- Differential and Absolute Inspection
- Selection of Probe Size

- Selection of ECT frequency
- Depth Curves
- Sizing of defects

Ferromagnetic Tubing Inspection- Remote Field ECT

- RFECT Theory
- Probes
- Selection of Probe Size
- Selection of Probe Frequency
- Impedance Plane Analysis

ECT Instruments

- Minimum requirements for Surface Inspection
- Portable Instrumentation
- Minimum requirements for Tubing Inspection
- Computer Controlled Instrumentation
- Sampling Rate and Pull Speed

SPECIFIC TRAINING

Codes and Standards

- ASME Section V
- ASTM Standards

PRACTICAL TRAINING

Setting up the Instrument

Selection of Frequencies for Tube Inspection

Selection of Probe Size

Calibrations

Depth Curve

Data Acquisition

Test on Various Samples

Prepare test Report

EXAMINATIONS

- General
- Specific
- Practical Tests

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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