

Eddy Current Testing

Level II – 40 hours
Training Course Outline

SCOPE

This course covers advanced eddy current testing, aircraft inspection, tubing inspections

TRAINING

Training material is presented in modules that are followed by quizzes

Module 11: Impedance Plane – Solid Cylinders and Tubing

- Solid Cylinder
- Solid Cylinder to Tubing
- Solid Cylinder with steps

Module 12: Scanning

- Scanning Speed
- Scanning Pitch
- Setting Filters

Module 13: Aircraft Inspection

- Surface Inspection
- Bolt hole Inspection
- Bolt thread inspections

Module 14: Non-ferromagnetic Tubing Inspections - I

- Bobbin Probes
- Probe Selection
- F_{180} and f_{90} frequencies
- ID vs OD flaws
- ASME Calibration Tube
- Depth Curves
- Data Acquisition Instrumentation
- Sampling Rate and Pull Speed

Module 15: Multi-frequency Non-ferromagnetic Tubing Inspections - I

- Differential and Absolute Tests
- Detection of pitting and wall loss
- Multi-frequency testing
- Mixing Baffle signals
- Resolving Permeability
- Analysis

Module 16: Introduction to Magnetic Flux Leakage

- Coils and Hall effect sensors
- Probes
- Scanning

Module 17: Introduction to ACFM

- Principle of ACFM
- B_x and B_y displays

Module 18: Ferromagnetic Tubing Inspection - Remote Field Eddy Current

- Principle of RFECT
- Near field and Far field
- RFT Curves – Circumferential extent and depth
- Setting reference of the Baffle signal
- Depth Curves

Module 19: ECT Instrument Calibration

- Frequency of Instrument Calibration
- Phase and amplitude Linearity Requirements

Module 20: Techniques for Heat Exchanger Tubing

- Technique Selection for Heat Exchanger Tubing Inspection

SPECIFIC TRAINING

Codes and Standards

- ASME Section V, Article 8

PRACTICAL TRAINING

- Setting up the Instrument
- Selection of Frequencies
- 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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