Level II - Ultrasonic Testing

Course: A 40 hour course intended to address the body of knowledge outlined in ASNT CP-105.

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REFERENCE & TRAINING MATERIAL:

1. ASNT UT Level I/II Powerpoint Presentation
4. AWS D1.5 Part C. Ultrasonic Testing of Groove Welds
5. ASTM E 114 (2005)

UT Level II Lesson Plan Outline

Day 1

Lesson 6 Review of Ultrasonic Techniques

A. Ultrasonic Instruments
B. Ultrasonic Screen Displays
C. Transducers
D. Base Material Testing
E. Weld Testing
F. Quiz (UT Lesson 6)
G. Lab Exercise 1 (UT Lesson 6)

Reading Assignment: Chapter 6 and 7 of The Ultrasonic Training Classroom Training Book
Day 2

Lesson 7  Equipment Calibration

A. Transducer Performance Checks
B. Straight Beam Calibration
C. Angle Beam Calibration
D. Quiz (UT Lesson 7)
E. Lab Exercise 1 (UT Lesson 7)

Reading Assignment: Chapter 8 of The Ultrasonic Training Classroom Training Book

Day 3

Lesson 8  Evaluation of Base Materials

A. Castings
B. Slabs
C. Billets
C. Bars and Rods
D. Plate and Sheets
E. Extrusion Process
F. Forging
G. Composites
H. Welds
I. Quiz (UT Lesson 8)
J. Lab Exercise (UT Lesson 8)

Reading Assignment: Chapter 9 of The Ultrasonic Training Classroom Training Book

Day 3

Lesson 9  Ultrasonic Testing Applications

A. Testing Applications
B. Detecting Planar Discontinuities
C. Scattering Discontinuities
D. Test Objects with Curved Surfaces
E. Test Objects with Irregular Surfaces
F. Compressed Discontinuities
G. Material Characterization
H. Quiz (UT Lesson 9)
I. Lab Exercise (UT Lesson 9)

Reading Assignment: Chapter 10 of The Ultrasonic Training Classroom Training Book

Day 4

Lesson 10 Transducer Characteristics

A. Transducer Characterization Equipment
B. Recording of Transducer Beam Profiles
C. Analysis of Transducer Data
D. Quiz (UT Lesson 10)

Reading Assignment: Chapter 11 of The Ultrasonic Training Classroom Training Book

Day 5

Lesson 11 Evaluation Standards

A. ASTM
B. ASME
C. API
D. AWS
E. Sample Specifications
F. Quiz (UT Lesson 11)
G. Review of Level II Ultrasonic Testing
H. Final Examination