

Advanced Ultrasonic Detection and Flaw Characterization Training Program

An advanced ultrasonic training course designed for Level II, Level III and NDE management and Supervisor personnel. This course will present ultrasonic examination methods for flaw detection and Time of Flight (TOF) characterization techniques in materials susceptible to Intergranular Stress Corrosion Cracking (IGSCC/SCC), mechanical fatigue and thermal fatigue. These methods can be applied to piping, plate, and vessel components in petroleum, chemical, fossil, nuclear, and aerospace industries or any industry involved in ultrasonic examination of metallic product forms.

This “hands-on” practical advanced ultrasonic course includes shear wave and refracted longitudinal wave techniques for detection and signal characterization techniques to address the effects of echo dynamics, rise and fall time, and pulse duration for the identification of the ultrasonic signals.

In addition, Advanced Detection applications will cover Time of Flight (TOF) methods for ID Creeping Waves for flaw detection and signal characterization.

- Review of UT Theory and Ultrasonic Math Applications
- Ultrasonic Signal Characterization
- Weld Fabrication and Inservice Inspection Flaws
- Geometric Reflectors
- UT Inspection Coverage Angle Verification
- Transducer Selection and Angle/Exit Point Verification
- Calibration block design considerations
- Angle Beam Calibration for sound path (Time of Flight, TOF)
- Calibration for Sensitivity, Notches, Holes and DAC Curves
- Ultrasonic Examination Requirements, and Evaluation and Recording Criteria
- Plotting, Plan, and Dimensional View Data
- Introduction to ID Creeping Wave Technique
- 45 Degree, 60 Degree and 70 Degree Scan Evaluation of Recordable Indications