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ISSUE DATE	7-2-2017	REVISED DATE	NA			

ROYAL TECH TRAINING & CONSULTANCY

Method & Level	PCN Level 2- Ultrasonic Testing 3.1, 3.2,3.8 & 3.9
Course Duration - Days & Hours	12 days & 120 Hours
Revision & Updated on	Rev 3- Updated on 17-1-22

PCN Level 2 Ultrasonic Testing 3.1, 3.2, 3.8 & 3.9

Course Duration: 12 days (120 Hours) minimum duration

Course Overview:

This course provides comprehensive knowledge of the theory and practice of ultrasonic testing of welds for technicians to reach the Level II standard. Training accredited to PCN Level 2. This course is suitable for NDT personnel, inspectors, testers and engineers who require a thorough introduction to ultrasonic testing of plates and welded joints.


Course Content:

1. Basics of NDT, classifications of NDT
2. History of ultrasonics' & Physics of Sound, classification of sounds
3. Parameters-Modes of Ultrasound, behaviour of sound at interface, impedance, couplant, snells law, angles
4. Behaviour of sound in material- attenuation losses, near field, far field, Area amplitude distance relations
5. Generation of Ultrasound-Probe-Properties- Piezo Electrical Crystals- Factors Affecting Selection of a piezoelectric transducer-Pulse Characteristic -Probe Parts-classification and Construction
6. Equipment- control systems- Data Display- A, B, C Scan, PRF
7. Techniques- Pulse echo- straight, Delay, focussed, Dual, angle beam, tandem, Pitch catch, straddle, immersion
8. Blocks- AAC, DAC, ASTM, V1, V2, IOW, Reference blocks- Equipment, probe performance checks, DAC, Transferer correction, DGS
9. Inspection – Parent metal, sizing techniques- mathematics, weld inspection, sizing techniques
10. Indication interpretation & recording techniques
11. Product technology- welding process and its associate defects
12. Inspection & reporting of welds using Pulse echo UT for various types of weld joints
13. Practical exercise and Daily assessment

Course Objectives:

1. Understand the basic concept of ultrasonic's, technique selection, equipment's and probes
2. Calibrate ultrasonic equipment using calibration blocks
3. Determine attenuation levels, Measure the thickness of steel plates, parent metal inspection
4. Locate and determine size of laminations in steel plates
5. Select correct type of probe to examine butt welded joints
6. Inspect, Detect and report the location and size of defects in butt welds
7. Interpret code requirements related to ultrasonic testing
8. Guidelines for written instruction, codes and test reports
9. Meet the syllabus requirements for PCN Level 2 as per PCN GEN Appendix C1.

Experience: 12 months experience required in order to gain full qualification.

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PCN Level 2 Ultrasonic Testing 3.8, 3.9

Duration: 3 days (depends on practice and experience)

About Course: If an NDT Engineer wishes to upgrade his career in the testing of ultrasonic welds, then he or she may wish to undertake the training for the PCN UT 3.8/3.9 supplementary examination. This training course offers training and instructions for the ultrasonic inspection of alternative configurations of welds, specifically being structural Tee welds, Nozzle weld configurations and/or Structural Node weld configurations. The training covers both partial and full penetration welds of these configurations.

Experience: To be eligible for the 3.8/3.9 training course, all students must hold a valid PCN level 2 - 3.1 & 3.2 qualifications and be fully competent in the testing of butt welded plate & pipe.