

Radiography Testing

Level I - 40 hours

Training Course Outline

SCOPE

This course will prepare a candidate to perform Industrial Radiography

COURSE OUTLINE

Module 1: RADIOLOGICAL SAFETY

- Units
- Dosage and Health Effects
- Radiation detectors including Dosimeter, survey meter, film badge, TLD
- Types of Radiation
 - X-Ray
 - Gamma Rays
- Properties of Radiation
- Attenuation of Electromagnetic Radiation

Module 2: TYPES OF RADIATION

- Particulate Radiation – Alpha, Beta, neutron
- Electromagnetic radiation – X-Ray, gamma ray
- X-Ray Production
- Gamma-ray production
- Gamma ray energy
- Energy Characteristics of common radioisotopes
- Energy Characterization of X-Ray machines

Module 3 INTERACTION OF RADIATION WITH MATTER

- Ionization
- Radiation Interaction with matter
- Units of radiation
- Attenuation and Shielding
- Half value layer
- Inverse Square law

Module 4 EXPOSURE DEVICES AND RADIATION SOURCES

- Radioisotope Sources
- Radioisotope exposure device Characteristics
- Electronic Radiation Sources – 500 Kev or less
- Electronic Device Sources – Medium and High Energy

Module 5: BASIC PRINCIPLES OF RADIOGRAPHY

- Geometric Exposure Principles
- Radiographic Screens
- Radiographic Cassettes

- Composition of radiographic Film

Module 6: Exposure Techniques

- Single Wall
- Double Wall
- Panoramic
- Use of Multiple Films

Module 7: SHOOTING A RADIOGRAPH

- Film Type Selection
- Exposure Time
- Radiographic Technique setup
- Setup and Geometrical Unsharpness
- Establishing 2mR boundary
- IQI Selection and Placement
- Location markers

Module 8: Radiographs

- Formation of the latent Image on Film
- Inherent unsharpness
- Arithmetic of radiographic exposure
- Characteristic Curve
- Film speed and Class description

Module 9: Radiographic Image Quality

- Radiographic Sensitivity
- Radiographic Contrast
- Film Contrast
- Subject Contrast
- Definition
- Film Graininess
- Image Quality Indicators (IQI)

TRAINING PROGRAM EXAMINATIONS

- General
- Specific
- Practical



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