



Suggested Study Topics

Level II Radiography Testing General Certification Examination

Note: This is not a complete list of the topics that may be covered on a certification examination. It should be used only as a guide to assist you in preparing to take a certification examination exam.

1. General knowledge of radiography testing application (advantages, limitations, applications, types)
2. Principles of radiography (i.e. types of radiation sources, production of x-rays and gamma)
3. Terms used in radiography (i.e. REM, RAD, Dose, decay, subject / film contrast, definition, density, characteristic curves)
4. The use of IQI (image quality indicators, shims, ASTM and Wire / plaque types)
5. General radiation safety
6. The composition of x-ray tube (i.e. filament, anode, cathode, target, focus spot)
7. Relationship of kV and mA to the quantity and quality of the x-ray energy
8. Gamma ray sources (i.e. characteristics, half life, wavelength)
9. Attenuation of radiation (i.e. photoelectric effect, Compton scattering, pair production)
10. Frequency, wavelength and penetration of radiation
11. Principle of shadow formation (i.e. enlargement, distortion, geometric unsharpness)
12. Scatter Radiation
13. Types of recording media (i.e. x-ray film)
14. Lead screens (intensification and filtration of secondary radiation)
15. Fluorescent intensifying screens (advantages and disadvantages)
16. Film types and speeds (i.e. composition of film, grain size, latitude charts)
17. Exposure factors (i.e. how to calculate exposure times)
18. Knowledge of typical RT techniques (i.e. single / double wall, panoramic exposures)
19. General film processing techniques (manual and automatic, artifacts)
20. General types of discontinuities found with radiography
21. Inverse square law
22. Radiography calculations (formulas will be provided – i.e. determining changes to SFD, exposure times, density on film)
23. High voltage x-ray equipment (i.e. awareness of an example)
24. Half value layers
25. Discontinuities (i.e. commonly found in castings, welds, base material)
26. General knowledge of codes (i.e. API, ASME Section V, B.31.1)

Reference Sources:

- Nondestructive Evaluation and Quality Control Vol. 17
- Handbook of Nondestructive Evaluation – CJ Hellier McGraw-Hill
- ASTM 1316 – terms used in nondestructive testing
- http://www.ndt-ed.org/index_flash.htm NDE/NDT Resources
- www.asnt.org – American Society for Nondestructive Testing