

Radiation Safety Orientation: Content Outline

The orientation takes approximately 3 hours to complete from the presentation to the final test.

The topics of discussion at Ohio University's Radiation Safety Orientation are summarized as follows:

1. Video (30 Minutes: "Radionuclide Hazards, Chemical Hazards, Emergency Response")
2. Understanding ionizing radiation (general overview)
3. NRC vs. Agreement State (Ohio Department of Health)
4. Assumption of risk
5. External hazard analysis
6. Pregnancy guideline (limits, declaration, sensitivity of fetus, etc.)
7. Explanation of radiological terms (physical, biological, half life, decay, radiation emission: types, range, penetrating capabilities, effective shielding)
8. Activity definition/units (Curie vs. Becquerel)
9. Maximum permissible occupational exposure (whole body, extremities, organs, body burden)
10. Units of measure (Roentgen, rad, rem, Gray, Sievert)
11. Inverse square law
12. ALARA
13. Posting/signage (NRC form 3 – Notice to Employees, Ohio Dept. of Health Notice to Employees, Lab Rules (ie: food, restricted areas, emergency procedures, waste handling, surveys, proper clothing, security, etc.) Caution Radioactive Materials, Caution Radiation Area, Pregnancy Declaration)
14. Personal Monitoring (film badge, ring badge, fetal badge, bioassays)
15. Laboratory monitoring and analytical equipment (survey meters and their detectors, Geiger-Mueller Survey Instrument, NaI, ion chamber, beta scintillator, etc.; Liquid Scintillation Counters, Gamma counters)
16. Methods of performing surveys (wipes, survey meter, when to perform, contamination – action limits, decontamination, documentation)
17. Proper use of survey meter including operations check
18. Waste handling
19. Emergency procedures (area/personnel contamination)
20. Demonstration of commercial products containing radioactivity
21. Test (must have 85% to pass)