

Syllabus — Course 303

Length: 5 days

Target: Persons who must characterize an “unpackaged” radioactive material – ensuring it is in full compliance with all applicable classification and packaging regulations – and prepare the package for shipment. This includes, but is not limited to material classifiers; waste designators; laboratory technicians; field operations; environmental samplers; managers and supervisors; inspectors; auditors; engineers; anyone involved in the radioactive materials packaging or transport.

Prerequisite: RRI's DOT Hazardous Materials & Radioactive Materials Transport Workshops (Courses 201 & 203)

Intensity: Mild Medium Challenging Extreme

Materials: RRI provides all training materials including the latest Mangan Communications, Inc. 49 CFR 100-185 and applicable letters from the regulators. Testing and course completion certificate are also provided.

Objectives & Topics:

Module 1: Introduction to the Radioactive Materials Transport Regulations

Identify the international and domestic scope of the Class 7 transport regulations.

1. Appreciate the role of the International Atomic Energy Agency (IAEA) concerning the Class 7 packaging and transport regulations.
2. Recognize the IAEA Class 7 packaging and transport regulations and support documents.
3. Identify the international agencies and regulations governing the packaging and transport of Class 7 material.
4. State the roles and responsibilities of the U.S. domestic Class 7 packaging and transport regulators.
5. Identify the domestic regulations for the packaging and transport of Class 7 material.

Module 2: Definitions and Terminology

Define unique terms in the Class 7 radioactive materials packaging and transport regulations.

1. Identify terms associated with the packaging and transport of Class 7 material.
2. Define terms associated with the packaging and transport of Class 7 material, including the defining criteria for Class 7 radioactive material.

Syllabus — Course 303

Module 3: Basic Safety Concepts: Materials and Packagings

Appreciate the graded requirements prescribed for packages intended for transporting radioactive materials.

1. State the three core philosophies behind the Class 7 material transport regulations.
2. Appreciate the application of the Q-System in establishing activity limits.
3. Describe the basic philosophy for package design.
4. Recognize the components of a package.
5. Relate the concepts for routine, normal and accident conditions of transport to the requirements for a given package type.
6. Explain the design and performance standards applicable to a given packaging type.

Module 4: Activity Limits and Material Restrictions

Optimally categorize radioactive materials.

1. Determine if a material to be shipped is subject to the transport regulations, including mixed hazards.
2. Determine if the material may be classified as Special Form radioactive material.
3. Establish the quantity of radioactive materials in terms of A_1 and A_2 .
4. Determine if the material activity is within the activity limits for excepted packages.
5. Determine if the material qualifies as LSA Material.
6. Determine if the material qualifies as SCO Material.
7. Determine if the material is fissile for purposes of the transport regulations.
8. Recognize if UF_6 is present.
9. Designate if the material is a hazardous substance.
10. Recognize the difficulty in inspecting activity limits and categorization of Class 7 radioactive material.

Module 5: Selection of Optimal Package Type

Select the package type options for a given radioactive material package.

1. Select appropriate package type(s) for the material, based on content limits and material type.
2. Recognize the constraints imposed by the Regulations for the package type.
3. Recognize the additional constraints imposed by the Regulations if the contents are fissile or UF_6 .
4. Explain the advantages in optimally classifying the radioactive contents.
5. Employ packaging options to adequately assess if the packaging used is within the scope of the regulations

Syllabus — Course 303

Module 6: Requirements for Transport

Carry out the requirements for the transport of radioactive materials.

1. Apply the requirements for transport of an excepted package.
2. Apply the requirements for transport of LSA material and SCO in their authorized package(s).
3. Select the appropriate Proper Shipping Name.
4. Apply the marking requirements for a given package and its contents.
5. Determine the Transport Index for a given package or overpack.
6. Determine the appropriate label to be applied to a given radioactive material package or overpack.
7. Determine the Criticality Safety Index (CSI) for a given fissile material package.
8. Describe the vehicle placarding requirements for radioactive material.
9. Identify the particulars required for inclusion in the accompany shipping documentation for a consignment of radioactive material.
10. Recognize the significance of the consignor's declaration.
11. Recognize when additional information must be supplied by the consignor to the carrier with the transport documents.
12. Inspect a shipment of radioactive materials for compliance to the applicable domestic regulations.

Module 7: Controls for Transport

Identify controls that are required for the transport of Class 7 radioactive materials.

1. State the dose rate limits placed on packages and vehicles.
2. Recognize the contamination limits placed on packages and vehicles.
3. Identify the thermal limits placed on packages of radioactive materials in transport.
4. Apply the package and conveyance controls placed on packages containing fissile materials.
5. Locate the additional constraints on Class 7 packages and conveyances as identified by each given modal mode.

Module 8: Other Packaging and Transport Requirements

Identify other requirements and considerations that affect or are affected by the transport of radioactive materials.

1. State the notifications that must be made to Competent Authority for a given package or shipment situation.
2. Recognize the importance and requirements for a Quality Assurance program.
3. List the additional requirements associated with the use of a given package or shipment type.
4. Identify the additional requirements imposed HRCQ and IRF shipments.
5. Recognize the elements of a DOT required security plan and associated requirement to ensure in-transit security.
6. Recite the minimum training and testing requirements for hazmat employees involved in the packaging and transport of Class 7 radioactive materials.
7. Explain the role and requirements of Compliance Assurance.