Transportation FAQs

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This document contains frequently asked questions (FAQs) about hazardous and radioactive waste transportation.

Waste shipments to commercial treatment and/or disposal facilities are made according to well-established, rigorous, federal regulations issued by the Department of Transportation (DOT) and the Nuclear Regulatory Commission (NRC).

About three million radioactive materials packages are shipped in the United States annually. The Department of Energy (DOE) successfully completes thousands of shipments each year. The shipments have included a variety of waste types, such as transuranic waste, low-level radioactive waste, mixed low-level radioactive waste and used nuclear fuel, primarily by highway and rail. All DOE shipments are conducted in accordance with well established, rigorous federal regulations issued by DOT and the NRC. Further, DOE requires use of commercial motor transporters who have been evaluated by DOE for their safety performance and compliance with federal regulations.

DOE has an extraordinary transportation safety record. In fiscal year 2021, DOE safely transported over 4 million hazardous materials shipments, traveling more than 6 million miles.

Transporting/Shipping Hazardous or Radioactive Material is Highly Regulated

All shipments of radioactive material must be packaged and transported according to strict federal regulations.

- Radioactive material can be transported by truck, train, plane, or ship.
- There are special regulations that help keep drivers, the public, and the environment safe.
- The packaging used to transport radioactive material is tested to make sure it will keep people safe if there is an accident.
- The amount and type of radioactivity present in a shipment determines how it can be transported and what kind of controls are required.

Special packaging, labeling, and methods are used when transporting radioactive materials.

- Packaging is based on the radioactive material being shipped. Each kind of packaging requires specific testing to make sure it can withstand accidents, fire, and water if something goes wrong. Shippers label packaging with the type of material inside, and, when required, place a sign, or placard, on the vehicle that states radioactive material is on board.
- Most radioactive material is shipped on highways. Radioactive materials are regularly used and shipped for medicine, agriculture, research, manufacturing, non-destructive testing, and minerals exploration.

Drivers are trained and safety is their priority.

- Drivers who transport radioactive materials are trained in basic radiation science and in radiation emergency safety. Safety and training practices ensure that the materials and packages are handled properly so that they cannot harm workers, the public, or the environment.

Many types of regulations apply to waste transportation.

- Various federal regulations govern waste transportation. For example, the DOT oversees the safety and security of hazardous materials during shipping. DOT's Office of Hazardous Materials Safety works with the NRC to keep shipments safe.
- The NRC works with the DOT to set safety rules for shipping radioactive materials. The NRC oversees the design and use of special packaging for shipping radioactive materials.

U.S. Department of Energy (DOE)

The following are links to DOE regulations and guidance related to transportation:

The DOE Radioactive Materials Transport Practices Manual (DOE M460.2-1a) is applicable to the F-Complex removal action – https://www.directives.doe.gov/directives-documents/400-series/0460.2-DManual-1a/@@images/file

Assuring safe transport of nuclear and hazardous materials – https://energy.sandia.gov/wp-content/gallery/uploads/Transportation.pdf

Packaging and transportation – http://energy.gov/em/services/waste-management/packaging-and-transportation

Radioactive materials transportation and incident response – https://www.energy.gov/sites/prod/files/em/TEPP/RadioactiveMaterialTransportationandIncidentResponse-QABook.pdf

What are the placards for on trucks?

Placards are used on trucks to designate that they are carrying hazardous substances. Each type of hazardous substance has its own unique four-digit code number. This code, called a North American (NA) or United Nations (UN) number, is located on placards placed on all four sides of the vehicle.

A substance is classified as hazardous if it "poses an unreasonable risk to public health and safety" when transported. You can use these NA or UN numbers to categorize the transport vehicles by load. Interpretations of these codes are found in DOT's Emergency Response Guidebook, which is widely available through on-line sources.

Some placards also have a hazard class number at the bottom corner which indicates the substance's particular class. Class 7 is for radioactive materials. Class 9 is for miscellaneous hazardous substances.

The following are example placards you may see on a truck. The left designates radioactive waste, and the right designates asbestos waste.

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