Radioactive Materials Transported by Cargo Ship

Almost half of incoming cargo to the United States arrives by containers onboard ships. Within the U.S., American merchant marine ships provide essential services to 41 States. While the chances of a transportation accident are small, an accident can result in expensive cleanup or unnecessary exposure to radioactive material to workers or the public. Since we cannot predict transportation accidents, strict packaging requirements are used in the shipment of radioactive material to ensure that even if there is an accident, radioactive material spills or releases do not occur.

Radioactive materials that are used in medical applications – radiopharmaceuticals and radioisotopes – are the most frequently shipped radioactive materials in the United States. Other shipments include low- and high-level radioactive waste, uranium fuel for nuclear power plants, and various gauges and devices for industrial, medical and academic institutions.

Who is protecting you

The States

In the United States, each state has programs on radiation protection and on the transportation of hazardous materials.

U.S. Department of Homeland Security (DHS)

The DHS Office of Customs and Border Protection operates programs to monitor U.S. Ports of Entry for radioactive material that could pose a threat to the national security.

The DHS Coast Guard is responsible for investigating any ship at sea that has been identified as potentially posing a radiation threat.

U.S. Nuclear Regulatory Commission (NRC)

The NRC is responsible for protecting the public from the effects of radiation from nuclear reactors, materials, and waste facilities. Regulating the safety of transported radioactive material is the joint responsibility of the NRC and the Department of Transportation (DOT). The NRC oversees the design and use of special packaging for shipping radioactive materials.

U.S. Department of Transportation (DOT)

DOT oversees transportation safety and security requirements by highway, rail, air and sea. DOT's Office of Hazardous Materials Safety (OHM) issues regulations on the shipment of hazardous materials. Title 49 of the Code of Federal Regulations defines and classifies hazardous materials, outlines safety procedures for shipping, and provides strict specifications for containers and packaging of the hazardous materials.

What can you do to protect yourself

Stringent rules apply to the transportation of radioactive materials by cargo containers, and technology continues to enhance the safety measures being used to keep the public safe. With these rules and safety measures, the risk to the public is very small.

If you do suspect radioactive material may be potentially released from a transportation accident or breached packaging, there are three basic ways to limit unnecessary exposure:

- **Time**: Limit the time spent around the radiation source.
- **Distance**: Increase distance from the radiation source.
- **Shielding**: Increase the shielding from a radiation source with protective barriers such as walls and buildings. Alpha radiation can be effectively shielded with something as thin as a piece of paper or plastic bag while gamma radiation requires barriers as thick as lead-lined walls.

Resources

You can explore this radiation source further through the resources at the following URL:
http://www.epa.gov/radtown/cargo-ship.htm#resources

We provide these resources on-line rather than here so we can keep the links up-to-date.