

PUTTING IT IN PERSPECTIVE FACTS ABOUT THE TRANSPORTATION OF RADIOACTIVE MATERIALS

The fact remains that the safety record for the transportation of radioactive material, including spent nuclear fuel, is superior to that of other hazardous materials such as flammable liquids or corrosive materials. Any discussion about the safety of transporting spent nuclear fuel must take place in the context of the safety record for the transportation of **all** hazardous materials in the United States.

The United Nations has nine classifications for hazardous materials. *Radioactive material is Class 7*. These classes are used by all the U.S. federal agencies involved in regulating, tracking, and investigating the transportation of hazardous materials.

Classes of Hazardous Materials

Class 1—Explosives

Class 2—Gases

Class 3—Flammable Liquids

Class 4—Flammable Solids

Class 5—Oxidizing Substances and Organic Peroxides

Class 6—Toxic Substances and Infectious Substances

Class 7—Radioactive Materials

Class 8—Corrosive Substances

Class 9—Miscellaneous

FACT: According to the latest U.S. Census Commodity Flow data, nearly a million shipments of hazardous material flow through the country's commerce system each day---everything from hair spray to oil & gas tankers.

About 20 million consignments of radioactive material (which may be either a single package or a number of packages sent from one location to another at the same time) take place around the world each year. This adds up to over one billion safe consignments since 1961 when the IAEA safe transport regulations were issued.

Radioactive material is not unique to the nuclear fuel cycle and only about 5% of the shipments are fuel cycle related. Radioactive materials are used extensively in medicine, agriculture, research, manufacturing, nondestructive testing and minerals' exploration. [From WNA's Transport of Radioactive Materials, updated OCT 2016]

FACT: If any radioactive material were released, the danger to the public would be infinitesimal. The DOE report "A Historical Review of the Safe Transport of Spent Nuclear Fuel" dated August 31, 2016 noted that "...the collective dose received by the general public from SNF and HLW shipments is smaller than the naturally occurring background dose received by the same population in the same period of time by four orders of magnitude." Thirty years of studies support this assertion and are summarized in the [Spent Fuel Transportation Risk Assessment report](#), which can be found on the NRC website using code ML14031A323.

CONCLUSION:

In the USA one percent of the 300 million packages of hazardous material shipped each year contain radioactive materials. Of this, about 250,000 contain radioactive wastes from nuclear power plants, and .01% of those packages contain used fuel. These are in robust 125-tonne Type B casks carried by rail, each containing up to about 24 MTU of used fuel.

The Nuclear Regulatory Commission notes: “Over the last 40 years, thousands of shipments of commercially generated spent nuclear fuel have been made throughout the United States without causing any radiological releases to the environment or harm to the public.” .