



Q: *Can waste be transported safely to a repository?*

A: The U.S. history of transportation of nuclear materials is impressive, as for the last 30 years, the nation has undeniably demonstrated that it can safely transport high-level nuclear materials. There has never been a transportation accident that has resulted in the release of any amount of radioactive material that has been harmful to the public or the environment.

For example, since 1965, government and industry groups have transported more than 10,000 spent fuel assemblies in more than 2,700 shipments over more than 1.6 million miles. While there have been a few accidents (four highway and four rail) involving the transport vehicles, none has resulted in the breach of a cask or the release of radioactive materials.

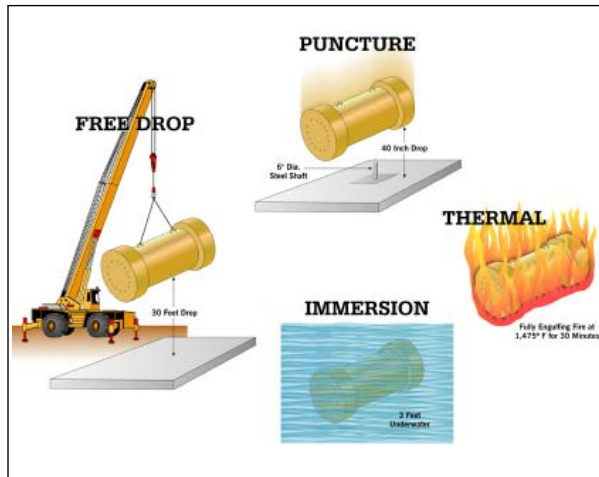
The DOE would use extremely durable and massive transportation casks whose designs are certified by the Nuclear Regulatory Commission for all waste shipments to the repository. To be certified by the Nuclear Regulatory Commission, casks must be designed to withstand severe accidents without release of their radioactive contents. To be certified by the Nuclear Regulatory Commission, each transportation cask design must be able to withstand **all** of the following tests, in the given sequence:

- A drop from 30 feet onto an unyielding surface (a surface so hard and resistant that it absorbs essentially none of the energy, causing the damaging energy to be absorbed by the cask itself at its weakest point). The forces that a cask experiences from this drop test are equivalent to hitting a bridge abutment at 120 m.p.h., followed by
- A drop from 40 inches onto a shaft 6 inches in diameter, followed by

The safety record for spent fuel shipments in the U.S. and other industrialized nations is enviable. Of the thousands of shipments completed over the last 30 years, none has resulted in an identifiable injury through the release of radioactive material.

- A fully engulfing fire at 1475 °F for 30 minutes, followed by
- Immersion in 3 feet of water

A separate cask must also be able to withstand immersion in about 650 feet of water for at least one hour.



To be certified by the Nuclear Regulatory Commission, every type of transportation cask must be able to withstand all of the tests shown above.



A legal-weight truck carries a cask containing spent nuclear fuel. Drivers are specially trained and certified, must be accompanied by at least one escort, must report in with the DOE every two hours, and are continuously monitored and tracked by satellite.