

WHAT MEASURES ENSURE SAFE TRANSPORTATION OF HIGH-LEVEL NUCLEAR WASTE?

Directions: Use what you have learned in your reading lesson to answer the following questions.

1. What aspects of the transportation of radioactive materials are regulated?

(All aspects are regulated: packaging, handling, labeling, loading and unloading, and routing.)

2. Describe the tests that are performed on a cask to certify its safety.

(Tests include a free drop from 9 meters [30 feet]; a puncture test from 1 meter [40 inches] onto a steel bar; exposure to a 800 °C [1,475 °F] fire for 30 minutes; and total immersion under 0.9 meters [3 feet] of water for 8 hours and then below 15 meters [50 feet] of water for 8 hours.)

3. Why is it important to perform cask testing?

(It is important to test casks to verify that the cask designs can withstand severe accident conditions without releasing radioactive materials to the environment.)

4. What are the advantages of the new cask designs?

(The multi-purpose canister concept would reduce the need for handling and could be used to store spent nuclear fuel. It would also provide one more barrier between spent fuel and the environment. High-capacity casks would carry more fuel per cask, requiring fewer shipments.)

5. What Federal agencies are responsible for the regulations that apply to the transportation of radioactive waste?

(The U.S. Department of Transportation regulates all aspects of shipping. The Nuclear Regulatory Commission certifies casks.)

6. A series of "full scale" crash tests were conducted in the United States during the mid-1970's. Describe one of the tests and its results.

(Test include crashing two tractor-trailers, each loaded with a cask, into a concrete wall. One crash, conducted at 98.19 kph [61 mph], had no effect on the cask. Another crash at 135.24 kph [84 mph], slightly damaged the cask, but did not release the simulated radioactive material it was carrying.)
