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NRC CHANGES REGULATIONS FOR TRANSPORTATION OF HIGH-LEVEL WASTE CONTAINING PLUTONIUM

The Nuclear Regulatory Commission is amending its packaging requirements for shipments of high-level radioactive waste containing plutonium if the waste has been imbedded in vitrified glass and placed in a sealed canister. The action responds to a 1993 petition from the Department of Energy.

The revised regulations continue to require a Type-B outer container for the sealed canister. Under the new rule, for example, shipment of high-level waste would be permitted in a canister that meets appropriate American Society of Mechanical Engineers' "Boiler and Pressure Vessel Code" criteria.

NRC regulations currently require that if licensees ship more than 20 curies of plutonium, the material must be enclosed in two packages. The outer one must be a "Type B" package, which under NRC regulations must receive NRC design review and approval and must withstand a series of specified tests to show that the package can withstand severe accidents. The separate inner container must pass certain other specified tests, including leak testing. The special inner packaging requirements are waived if the plutonium is in the form of reactor fuel elements, metal or metal alloys, or any other type of solid material that the Commission determines should be exempt from the double-containment requirement.

The primary purpose of the present requirements is to ensure that any plutonium that could be inhaled will not leak into the atmosphere under certain accident conditions during transportation. But the NRC believes these requirements can be relaxed for radioactive waste containing plutonium that has been "vitrified" into a glass form and put into a sealed canister because it is essentially incapable of being inhaled.

DOE indicated that it plans to ship high-level radioactive waste containing plutonium from four storage locations in Aiken, South Carolina; Hanford, Washington; Idaho Falls, Idaho; and West Valley, New York. The shipments would go, it said, to a geologic repository that DOE is responsible for developing for the deep-underground disposal of high-level radioactive waste and spent fuel. At the present time there is no such facility; however, Yucca Mountain, Nevada, is currently being studied by DOE.

The high-level waste currently exists mostly in the form of liquid and sludge resulting from the reprocessing of defense reactor fuels. Although this reprocessing is aimed at removing plutonium from the spent fuel, some remains in the waste product. DOE plans to solidify the liquid and sludge material into a borosilicate glass form in which the high-level waste

is dispersed and immobilized.

A proposed rule on this subject was published in the Federal Register on May 8, 1997. Changes made as a result of comments received are described in a notice to be published shortly.

The NRC received a petition from International Energy Consultants, Inc., requesting that all special requirements for plutonium shipments be eliminated. Notice of receipt of this petition was published in the Federal Register for public comment on February 19. This petition will be considered separately from the rulemaking that specifically involves shipments of waste containing plutonium that has been vitrified and placed in a sealed canister.

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