

POLICY ISSUE **(Notation Vote)**

October 8, 1996

SECY-96-215

FOR: The Commissioners

FROM: James M. Taylor
Executive Director for Operations

SUBJECT: REQUIREMENTS FOR SHIPPING PACKAGES USED TO TRANSPORT
VITRIFIED WASTES CONTAINING PLUTONIUM

PURPOSE:

To request Commission approval of staff's intent and approach for making a determination under 10 CFR 71.63(b)(3), of whether canisters containing vitrified wastes with plutonium should be required to be transported in shipping packages providing double containment. This determination will be the first made under this provision, which has been in effect since 1974.

BACKGROUND:

The Commission has imposed, in 10 CFR 71.63, special requirements on licensees shipping plutonium in excess of 0.74 terabecquerels (20 curies). Those requirements include that plutonium be in solid form, and that packages used to ship plutonium provide double containment. In adopting these requirements, the Commission specifically exempted plutonium in the form of reactor fuel elements, and metal or metal alloys from the requirement for double containment.

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NOTE: TO BE MADE PUBLICLY AVAILABLE WHEN
THE FINAL SRM IS MADE AVAILABLE

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The Commission also adopted a provision, 10 CFR 71.63(b)(3), which allows the Commission to determine, on a case-by-case basis, whether other plutonium-bearing solids should be exempt from the double containment requirement. The criterion for making such a determination is that the plutonium be in an essentially nonrespirable form.

On November 30, 1993, the U.S. Department of Energy (DOE) petitioned the Commission to amend 10 CFR 71.63 to add a provision that would specifically exempt canisters containing plutonium-bearing vitrified waste from the packaging requirement for double containment. The Commission published the petition, docketed as PRM-71-11, in the Federal Register on February 19, 1994, requesting public comment by May 4, 1994. The public comment period was subsequently extended to June 3, 1994, at the request of the Idaho National Engineering Laboratory (INEL) Oversight Program of the State of Idaho.

Comments were received from three parties: the U.S. Environmental Protection Agency (EPA); Nye County, Nevada (the site for the proposed spent fuel and high-level waste repository at Yucca Mountain); and the INEL Oversight Program of the State of Idaho. In brief, EPA reviewed the petition in accordance with its responsibilities under Section 309 of the Clean Air Act, and had no specific comments. Nye County agreed with the rationale and arguments advanced by DOE, and had no objection to DOE's petition. Idaho commented that the petition was premature, because it did not specify the parameters nor performance standards that high-level waste must meet. Note that, as discussed below, staff will define parameters or performance standards for the determination under 10 CFR 71.63(b)(3).

On June 1, 1995, staff met with DOE in a public meeting to discuss the petition request, and the possible alternative of requesting a determination under 10 CFR 71.63(b)(3). DOE informed the Commission, by letter dated January 25, 1996, that it intended to seek a formal determination, and that the request for a determination would be sent to the Commission in the second quarter of FY 1996. The Commission received a formal request for a determination under Section 71.63(b)(3) on July 16, 1996. The DOE request asks that the original petition for rulemaking be held in abeyance until a decision has been reached on its determination request.

DISCUSSION:

In 1974, the Commission, anticipating that a large number of shipments of plutonium nitrate liquids could result from spent fuel reprocessing, revised its regulations to require that plutonium in excess of 0.74 terabequerels (20 curies) be shipped in solid form. It was argued that shipment of plutonium liquids was susceptible to leakage, particularly if a shipping package was improperly or not tightly sealed. The potentially increased number of large packages (probably of more complex design) to be shipped, and the concurrent increased possibility of human error resulting from handling this expanded shipping load both precipitated this concern about the leakage of liquids.

A similar argument was advanced for dispersible plutonium oxide powder (i.e., that it also was susceptible to leakage if packages were improperly sealed). Plutonium oxide powder was of particular concern because it was the most likely alternative form (as opposed to plutonium nitrate liquids) for shipment. To address the concern with dispersible powder, the Commission required that plutonium not only be in solid form, but also that solid plutonium be shipped in packages requiring double containment.

In publishing the final rule on the form for shipping plutonium, the Commission, in an accompanying statement of considerations, stated that the additional inner containment requirements are intended to take into account the fact that the plutonium may be in a respirable form (see 39 FR 20960). The Commission further stated that,

Since the double containment provision compensates for the fact that the plutonium may not be in a "nonrespirable" form, solid forms of plutonium that are essentially nonrespirable should be exempted from the double containment requirement. Therefore, it appears appropriate to exempt from the double containment requirements reactor fuel elements, metal or metal alloy, and other plutonium bearing solids that the Commission determines suitable for such exemption. The latter category provides a means for the Commission to evaluate, on a case-by-case basis, requests for exemption of other solid material where the quantity and form of the material permits a determination that double containment is unnecessary.

DOE's July 16, 1996, request for a determination is the first such request submitted under 10 CFR 71.63(b)(3). As such, there is no prior determination under this provision that would serve as a legal or technical precedent for making a determination. Therefore, staff requests that the Commission approve the following general approach:

- (1) Staff intends to make a determination whether canisters containing plutonium bearing vitrified wastes should be required to be transported in packages providing double containment, using criteria based on the non-respirability of the vitrified wastes.
- (2) The draft staff determination, along with the criteria used to make the determination, will be published in the Federal Register for a public comment period of not less than 60 days.
- (3) A final determination, issued by the Director of Nuclear Material Safety and Safeguards, will be published in the Federal Register, once all public comments have been resolved. A second Commission paper will be developed prior to the final Federal Register publication giving the Commission a chance to comment on the determination.

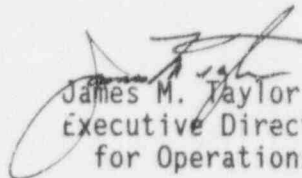
COORDINATION:

This paper has been coordinated with the Office of the General Counsel (OGC), and OGC has no legal objection to this paper.

RECOMMENDATIONS:

That the Commission:

Approve the general procedure outlined in this paper for making and issuing a determination under 10 CFR 71.63(b)(3) that canisters containing plutonium-bearing vitrified wastes should not be required to be transported in shipping packages providing double containment based on the nonrespirability of the vitrified waste form. As discussed in the general procedure, the staff will provide the Commission with the opportunity to comment on the final determination before it is issued.


James M. Taylor
Executive Director
for Operations

Commissioners' comments or consent should be provided directly to the Office of the Secretary by COB Thursday, October 24, 1996.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT October 17, 1996, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

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