



Department of Energy

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OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

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Ms. Annette L. Vietti-Cook, Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

PR-71
(67FR21390)

ATTN: Rulemaking and Adjudications Staff

Dear Ms. Vietti-Cook:

The Department of Energy generally supports the U.S. Nuclear Regulatory Commission's proposed changes to 10 CFR Part 71 making this Part compatible with International Atomic Energy Agency standards in TS-R-1. In harmonizing its requirements with the international standards, the Commission should ensure that the changes are consistent with a risk based approach to regulation.

The Department has two major comments. First, the Department agrees with the Commission's proposal to remove § 71.63(b) requiring a "separate inner container" (double containment) for plutonium. The scientific basis and logic for removal of this requirement is well described in the proposed rule. Second, the Department urges the Commission to reconsider the proposed requirements in Section 71.15, which deals with exemption from classification as fissile material. This revision does not appear to represent a risk based approach. Details on these issues and several other sections are included in the enclosure.

Thank you for the opportunity to review this notice of rulemaking and provide comments. If you have any questions regarding these comments, please contact me at (202) 586-7709, or Ms. Patrice Bubar, Office of Integration and Disposition, at (202) 586-5151.

Sincerely,

Jessie Hill Roberson
Assistant Secretary for
Environmental Management

Enclosure



**U.S. Department of Energy Comments on the
U.S. Nuclear Regulatory Commission Proposed Rule on 10 CFR Part 71 “Compatibility
with IAEA Transportation Safety Standards (TS-R-1) and Other Transportation Safety
Amendments, dated April 30, 2002**

GENERAL COMMENT.

The Department of Energy generally supports the proposed rule. During the process to finalize the rule, the Commission should ensure that its provisions represent a risk-based approach.

SPECIFIC COMMENTS.

§71.4 Definitions.

The definition of LSA-I should agree with the proposed DOT definition. The definition of “person” as stated in §72.3 should be included under §71.4.

§71.15 Exemption from classification as fissile material.

This section is inconsistent with TS-R-1 and should be revised to retain the exceptions stated in paragraph 672 of those regulations. Specifically, the 15g and 5g per 10 liter volume exceptions should be retained as stated in the current regulations.

Given the manner in which all shipments are made under §71.15(a)(1) and (a)(3) of the current regulations, there are insufficient data in NUREG/CR-5342 to support changing these sections of the regulations. The assumptions made in this analysis appear based on theoretical scenarios that do not reflect current shipping practices. The NRC may wish to re-examine its data analysis to identify whether this change is appropriate from both a cost and safety perspective.

While DOE recognizes the necessity for increased security, the proposed controls appear disproportionate to the actual risk posed by typical shipments. If the intent of the controls is to address concerns with mass conveyance limits, then a balance must be made with the operational aspects of transportation. Data in NUREG/CR-5342 do not demonstrate that the shipments currently made under these sections pose any criticality concern or require the additional controls proposed. DOE’s shipping history for these materials has been exemplary and there have been no criticality concerns associated with them.

DOE uses the volume exception provisions extensively and has done so for decades without incident. Typical DOE shipments made under these provisions include contaminated laundry shipments, environmental sample shipments, and low-level waste shipments. The proposed regulations would result in DOE being unable to ship laundry and environmental sample shipments in their current packaging configuration (e.g., fiberboard boxes, poly bottles in plastic coolers, canvas bags, metal boxes and drums, and railcars).

Elimination of these provisions would pose an undue and costly burden to DOE cleanup operations, without a demonstrated increase in safety. The economic impact to DOE sites would be significant. DOE’s Oak Ridge facility alone runs weekly laundry shipments and as many as ten environmental sample shipments daily. The current provision for 15 grams per package should be retained for domestic shipments.

§71.15(b)

This section does not identify what standard is to be used in applying either the term “non-combustible” or the term “insoluble-in-water”. If this section is kept as proposed, there is a need to clarify the terms and specify an appropriate standard.

§71.22 (a)(3) Tables 71-1 and 71-2 Mass Limits for General License Packages.

The NRC should clarify how these are used for uranium enriched greater than 24%. Highly enriched uranium does not meet the criteria under §71.22(e)(5). This would have significant cost and operational impacts on DOE if uranium enriched >24% cannot be shipped in a DOT 7A.

§71.41 Demonstration of Compliance.

The Department of Energy supports the proposed provisions in paragraph 71.41(d) for special package authorizations. This revision provides a consistent approach to dealing with the transport of large pieces of equipment and non-standard items. The safety and cost effectiveness of onsite and offsite transfers of large equipment items will be improved with this provision.

§71.63 Special Requirement for plutonium shipments.

The Department of Energy supports the proposed removal of the requirement for “double containment” of plutonium from § 71.63. A single containment barrier is adequate for Type B packages containing more than 20 Curies of solid form plutonium. The Department of Energy conducted an in-depth analysis of the current double containment rule and identified the associated impact on worker health due to additional radiation exposure as well as projected increased operational costs. This proposed revision will reduce radiation exposure to personnel who open and close packages and will reduce the cost of packaging and its associated hardware. The excellent safety record of single containment Type B packages in 40 years of shipments, confirmed by DOE and NRC safety studies, as well as improved QA and analysis capability developed in that period, provide reasonable assurance that this revision to the Type B packaging standards for plutonium will provide adequate protection to public health, safety, and the environment during transport.

We recommend removal of §71.63 because it has no technical basis for existence and presents a continuing cost to DOE without any commensurate safety benefits. The requirement for double containment (separate inner container) is particularly troublesome and inconsistent with the science and radiation protection basis for packaging all radionuclides. Particular problems with the current requirement include:

— **Technical Basis:** The proposed rule cites the inconsistency of double containment with the technical basis of the A_1 and A_2 values, and the Q-system principles of equating radiation effects. To continue the artificial requirement for double containment plutonium contained in 10 CFR 71.63 removes flexibility in package designs that might be needed to meet DOE’s mission. Thus, the DOE urges NRC to eliminate the double containment requirement as early as practicable.

— **ALARA Inconsistency:** Double containment operations require more handling than single containment, which results in increased worker radiation exposure. Increased handling has caused and will cause unnecessary worker radiation exposure in the future during package operations, estimated to be 1,200 to 1,700 person-rem over a 10-year

period. This penalty is attributable almost entirely to the additional operations required for double containment of TRU wastes. The impact of dealing with the additional collective dose at WIPP, which has self-imposed an administrative worker dose limit of 1 rem/yr, would be to use more workers or develop more restrictive work processes. Both methods would be costly and unwarranted.

— **Transportation Risk:** The risk incurred by the public in incident-free transport relates principally to exposure to radiation from the package that cannot be eliminated. Double containment will have an impact on this source of risk because of elimination of an extra boundary. However, the reduction is likely to be relatively small. In an accident, removal of double containment may incur a small-calculated increase in public radiological risk. However, in any case, the dose rate is already small enough at distances where the public is likely to be exposed that the impact of single- or double contained material will not be consequential.

— **Excessive Cost:** Double containment increases cost without measurable benefit. The costs to DOE of double containment for the period 2001 through 2010 is estimated to be over \$60 million for transuranic waste and plutonium oxide shipments. In addition to the specific impacts cited above, not removing 10 CFR 71.63 requirements could have significant cost impact from design, certification, and fabrication of future packaging, such as the TRUPACT III or the DPP-1 and DPP-2, needed to complete DOE's *Accelerated Cleanup* strategy for resolution of the legacy wastes and materials from the cold war.

— **Outdated Regulatory Environment:** The proposed rule correctly states the rationale for the former Atomic Energy Commission's (AEC) decision for a separate inner container. The expectations for liquid plutonium nitrate shipments has never materialized and the AEC concerns are now moot.