

June 3, 2004

Mr. Matthew K. Silva, Director
Environmental Evaluation Group
7007 Wyoming Boulevard, N.E.
Suite F-2
Albuquerque, New Mexico 87109

Dear Mr. Silva:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am writing in response to your letter of April 8, 2004, in which you requested reconsideration of the Commission's decision to remove the packaging requirement for double containment for the shipment of certain forms of plutonium. The Commission removed the double containment requirement in the final rule amending Part 71 of Title 10 of the *Code of Federal Regulations* (10 CFR Part 71), "Compatibility with International Atomic Energy Agency Transportation Safety Standards (TS-R-1) and Other Transportation Safety Amendments" (69 Federal Register 3698, January 26, 2004). You requested that the Commission reconsider its decision to remove this requirement because you find no indication that the Commissioners were involved in the amendments to the Federal Register Notice (FRN); and you believe that the NRC response to your comments was inadequate.

I want to assure you that the Commissioners were involved in the changes made to the FRN, prior to publication, to acknowledge and respond to your July 26, 2002 letter. The staff developed responses to your comments and communicated these to the Commission before the final rule was issued (memorandum from William D. Travers, Executive Director for Operations, to the Commission dated January 15, 2004, ADAMS Accession No. ML040140771, Enclosure 1).

With regard to the issues raised in your April 8, 2004 letter, we continue to believe that they were already considered and adequately addressed in the final Part 71 rule, as elaborated in Enclosure 2. In addition, as stated in the letter to you from Martin J. Virgilio, dated March 1, 2004, we believe the changes made in the FRN prior to its publication reference and respond to your July 26, 2002 comments regarding the elimination of the double containment requirement. The March 1, 2004 letter also addressed NRC's consideration of the prepublication copy of EEG-89.

I would like to reiterate a point made in my response to the March 12, 2004 letter from the eight Western Governors. NRC's decision to eliminate the double containment packaging requirement was part of a rulemaking action rather than a packaging certification action. The final NRC rule will permit DOE to consider an alternate Type B package without double containment for the shipments to WIPP. The NRC decision does not invalidate the existing TRUPACT-II design, which still meets all remaining applicable requirements of Part 71. Thus, DOE could continue to use the TRUPACT-II to ship transuranic waste to WIPP. Moreover, DOE cannot change the design of the TRUPACT-II to remove the double containment without demonstrating that it is safe, and only with NRC review and approval of the design change. I would also like to clarify that the double containment criteria do not require

that each container be independently qualified as a Type B transportation container. For example, the double containment aspect of the TRUPACT-II design is achieved by the use of a thin-walled steel container placed within a thick-walled outer package that together form a single unit evaluated against Part 71. The significance of this is that the inner container itself is not approved as a stand-alone transportation package.

Thank you for your comments and your continued interest in the safe transportation of radioactive material.

Sincerely,

/RA/

Nils J. Diaz

Enclosures:

1. Memorandum to the Commission,
dated January 15, 2004
2. Responses to Comments from the
Environmental Evaluation Group,
April 8, 2004

Responses to Comments from the Environmental Evaluation Group, April 8, 2004

Comment 1: Although the NRC has concluded there would be less radiation dose to workers if the double containment requirement was eliminated, there is no indication that the staff performed their own analyses or reviewed/observed time motion studies or looked at actual dose data for the one double contained package (TRUPACT-II) that dominates current shipping. Rather, the staff makes statements such as "agrees that removal of double containment would result in reduced risk to radiation workers"; "the NRC believes worker dose would be reduced"; and "elimination of the double containment requirement will likely result in a reduction in worker radiation exposure." EEG's detailed analysis concluded there would be less radiation exposure with double containment.

Response 1:

Although not the primary basis for the rule change, NRC considered the issue of whether elimination of the double containment requirement would serve to reduce risk to radiation workers. Commenters provided conflicting information on this issue. The NRC considered the information and expressed the view that worker doses would be decreased for single containment, due to less handling (for example, the single containment for future packages would have simpler loading procedures). NRC also noted that radiation protection of transport workers (e.g., drivers, inspectors) and the public is provided through the package maximum radiation levels set forth in the U.S. Department of Transportation (DOT) regulations, which do not depend on double containment.

Comment 2: The Federal Register amendment response to EEG's comments on the A_1/A_2 issue and the weight penalty from double containment was essentially that these issues are not important. Rather, the important point is that "the NRC believes the decision to eliminate double containment is risk informed and reduces an unnecessary regulatory burden." Also, "the primary reason for removing the double containment requirement is that the NRC has no technical justification or basis for maintaining double containment for plutonium or any other radionuclide." Yet, there is no discussion of why elimination of double containment is risk informed or any demonstration that the double containment requirement is a regulatory burden. It is EEG's-position (which is developed more in EEG-89 than in the July 26, 2002 comments) that double containment has placed no practical burden on WIPP shipments because alternate single contained packages (TRUPACT-I, which was never certified and TRUPACT-III whose certification is pending), do not have advantages (relative to TRUPACT-II) in package weight, allowable payload, and waste volume capacity.

Response 2:

Requiring double containment for plutonium is not viewed as risk-informed because it is not consistent with the A_1/A_2 system for categorizing radionuclides for transport. As NRC explained in the final rule, "[t]here are many nuclides with A_2 values the same or lower than plutonium's for

which double containment has never been required. Thus, requiring double containment for plutonium alone is not consistent with the relative hazard rankings in Table A-1" (69 FR 3752). The Type B packaging standards, which the outer containment of plutonium shipments must meet, in and of themselves, provide reasonable assurance that public health and safety and the environment are protected during the transportation of radioactive material. Because the inner container is not needed, based on the A₁/A₂ system, it is an unnecessary regulatory burden on licensees. This regulatory burden consists of the cost of design, fabrication, and installation of the inner barrier itself, the loss of available payload due to existence of the inner container, and the additional exposure to workers from the additional handling needed for the inner container.

Comment 3: The Federal Register discussion states: "NRC continues to believe that a separate inner container provides an additional barrier to the release of plutonium in an accident (just as a package with triple containment would provide an even greater barrier to the release of plutonium in an accident). However, this type of approach is neither risk informed or performance based." The discussion offers no insight as to how the staff balanced whatever (theoretical) burden there might be to double containment versus the advantages of avoiding an accidental release that would have radiological contamination, shipping disruption, and public perception detriments in order to determine that double containment was not risk informed or performance based. Recently the NRC staff cites the transportation safety record of the last 30 years. Such complacency is reminiscent of old attitudes, which led Chairman Diaz recently to make the following statements regarding the Three Mile Island Accident: "Few experts thought that such a severe accident was even likely to happen... Confidence in the technology was very high."

Response 3:

NRC and DOT have undertaken significant efforts on these rules. The NRC based its decision on the excellent safety record of the NRC-certified Type B packages in which no fatalities or injuries have been attributed to material transported in a Type B package, the NRC certification process for these packages that include satisfying the 10 CFR Part 71 Hypothetical Accident Conditions, and the A₁/A₂ system, all of which underscore the fact that double containment is not needed to provide reasonable assurance of the health and safety of the public. The final 10 CFR Part 71 rule reflects the NRC's latest revision to its regulations to keep them compatible with International Atomic Energy Agency Safety Standards. The NRC periodically revises its regulations to reflect latest knowledge and experiences (69 FR 3698). We regret the impression that the removal of the double containment requirement may reduce public confidence. However, the Commission has the responsibility to both protect public health and safety and reduce unnecessary regulatory burden where possible. The NRC reviewed the petition that was submitted to eliminate double containment in the context of safety. In this review, we considered comments received from three publications in the Federal Register on this issue and six public meetings held across the country. The NRC staff also reviewed the available regulatory history for double containment. We believe the Commission has kept the public involved and informed of our actions on this rule and the reasons for our action.

Comment 4: The staff devotes a lot of attention to the requirement that liquid plutonium should not be shipped but downplays two other reasons for originally incorporating the double containment rule: (1) there would be a large number of shipments in the future; and (2) some waste will be shipped in respirable form. There will be over 20,000 future shipments to WIPP and much of this waste will contain respirable material.

Response 4:

Regarding the statement that some waste will be in respirable form, the A₁/A₂ system accounts for the potential of nuclides being in respirable form (69 FR 3720). The NRC's role in shipments to WIPP is limited to approving the design of packages used to transport the radioactive material to that facility, and is independent of the number of shipments. The NRC has concluded that the requirements in the revised 10 CFR Part 71 provide reasonable assurance for shipping container design, and from a risk informed perspective it should be recognized that the single containment design will reduce the amount of handling required during the shipment.

Comment 5: EEG's last major concern involves the threat of terrorist activity. We believe there is a greater likelihood of a radionuclide release from a terrorist attack on a single contained package. The removal of a barrier against release at this time of increased terrorist threat appears to be undesirable and inconsistent with the many nuclear security enhancements the NRC has made since September 11, 2001.

Response 5:

We share your interest in ensuring radioactive material security while in transport. Since September 11, 2001, the Commission has issued several security advisories; security orders (security orders contain requirements for licensees to implement additional security measures beyond that currently required by NRC regulations and as conditions of licenses); and associated guidance documents to the NRC licensees transporting certain radioactive materials. These guidance documents and additional security requirements have been tailored to the specific material being shipped and the risks associated with that material. Additionally, the NRC has performed vulnerability assessments on transportation packages for certain types of radioactive materials. We are also aware that the U.S. Department of Energy (DOE) has performed its own assessments of the risks associated with transportation of radioactive materials. With respect to shipments to the Waste Isolation Pilot Plant (WIPP), DOE is responsible for assuring or providing the security associated with such shipments, including potential sabotage. The NRC's role in shipments to WIPP is to approve, after they are found to be safe, the designs of packages used to transport the radioactive material to that facility. It should be noted that there are many actions, of a classified nature, that contribute to providing an appropriate level of security.