



DEPARTMENT OF THE NAVY

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

DOCKET NUMBER  
PETITION RULE PRM 73-10  
(64FR49410)

Dear Ms. Vietti-Cook,

This letter provides Naval Nuclear Propulsion Program (NNPP) comments in response to the Nuclear Regulatory Commission (NRC) Federal Register notice dated September, 13, 1999 requesting comments on a petition for rulemaking by the State of Nevada. The petition requests that the NRC amend its regulations governing safeguards for shipments of spent nuclear fuel against sabotage and terrorism. It also requests that the NRC conduct a comprehensive assessment of the consequences of terrorist attacks that have the capability of radiological sabotage.

The NNPP recommends the NRC deny the petitioner's requests. The petitioner has not provided sufficient justification for the requested actions. Based on our substantial experience in shipping naval spent nuclear fuel, the NNPP believes that the existing regulations ensure the safety of spent nuclear fuel and high level radioactive waste shipments. Although NNPP shipments are not regulated by the NRC, we are cognizant of the need to protect public safety, and strive to ensure our procedures are consistent with those required of NRC licensees to the extent our circumstances are consistent. Therefore, we are interested in ensuring unnecessary requirements are not added to the regulations.

Since 1957, the NNPP has completed over 700 container shipments of naval spent nuclear fuel by rail, all safely. In the over two million kilometers cumulatively traveled by these shipments, there have been no accidents, no releases of radioactivity to the environment, and no occurrences of acts of terrorism or sabotage. The NNPP has evaluated the risks associated with transportation of naval spent nuclear fuel in two recent Environmental Impact Statements (EISs) - the April 1995 Department of Energy Programmatic Spent Nuclear Fuel EIS, and the November 1996 Department of the Navy Container System EIS. These EISs used well established transportation impact analysis methodology, and included specific evaluation of the potential impacts of terrorist attacks using shaped charge weapons. The EISs concluded that the impacts associated with terrorist attacks are bounded, with significant margin, by the impacts of other

transportation accidents. And it is noted, for perspective, that the calculated impacts associated with the worst case transportation accidents, while of concern, are not unreasonably high (e.g., less than five latent cancer fatalities for a worst case accident - plane crash into a shipping container, in an urban area, with worst case weather conditions). The NNPP has also consulted with Department of the Army anti-armor munitions experts to confirm that the EIS analysis assumptions used regarding weapons capabilities were conservative.

The petitioner's concerns are focused on shipments of spent nuclear fuel and high level waste to the potential geologic repository at Yucca Mountain. Because naval spent nuclear fuel will also be disposed in the repository, the NNPP has been working with the Department of Energy (DOE) to support the repository effort. The DOE's July 1999 Draft EIS for a Yucca Mountain Repository evaluates the risks associated with transportation of spent nuclear fuel and high level waste to the potential repository, and specifically evaluates potential impacts of terrorist attacks. This EIS used the same well established transportation impact analysis methodology used for naval spent fuel shipment analyses, and similarly concludes that the impacts associated with terrorist attacks are bounded, with significant margin, by the impacts of other transportation accidents, and that those impacts are not unreasonably high.

The petitioner argues that since the NRC last evaluated the adequacy of spent nuclear fuel transportation safeguards regulations in 1984, the vulnerability of shipments to terrorist attacks has increased because the capabilities and availability of explosive devices has increased, and because new spent fuel shipping casks have been designed to increase payloads without exceeding specified weight limits. The NNPP disagrees with these premises. While it is true that cask designs and weapons have evolved over the past two decades, the changes that have occurred do not affect the adequacy of the current regulations. The stringent performance requirements for Type B casks result in thick-walled metal casks, including for newly designed casks. Shaped charge weapons, including the latest design larger weapons, create a narrow, focused jet of energy, which would cause a small diameter penetration in a thick-walled metal cask, resulting in limited damage to the cask contents and a limited release of radioactive material.

A June 1999 report prepared by Sandia National Laboratory to support preparation of the Draft Yucca Mountain EIS, "Projected Source Terms for Potential Sabotage Events Related to Spent Fuel Shipments", uses updated cask, spent fuel characteristic, release mechanism, and weapons capability information to calculate updated potential source terms for terrorist attacks on spent

fuel casks. The conclusion of this report is that a successful terrorist attack on a spent fuel shipment using a shaped charge weapon will not release a significant amount of respirable airborne material. Thus, the Yucca Mountain Draft EIS analysis, which uses the information from this report as an input, already directly addresses these issues raised by the petitioner, and demonstrates that changes to the regulations are not necessary.

The petitioner also argues that since the NRC last evaluated the adequacy of spent nuclear fuel transportation safeguards regulations, the nature of the terrorist threat has changed such that strengthening of the regulations is necessary. The NNPP disagrees that the nature of the terrorist threat has changed substantially from that which the existing regulations are designed to protect against. Simply listing terrorist attacks that have occurred in the United States over the past two decades, and speculating about increased concerns for terrorist attacks against nuclear facilities and shipments, does not support the position that changes to the regulations are necessary. The DOE, in conjunction with the NRC, the Department of Defense, and other government organizations with national security responsibilities, periodically review the terrorist threat and appropriate mitigating safeguards response. These ongoing reviews support that the existing safeguards regulations are adequate.

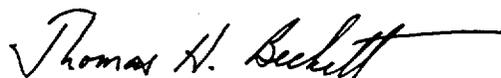
The petitioner requests that the NRC conduct a comprehensive assessment of attacks on spent nuclear fuel shipments that have the potential for radiological sabotage, including attacks on transportation infrastructure, attacks involving capture of a shipment and use of high energy explosives against the cask, and direct attacks on a shipping cask using antitank missiles or other military weapons. The NNPP believes attacks involving antitank missiles (i.e., shaped charge weapons), which are discussed above, have been adequately evaluated, and that the other types of postulated attack need not be considered further. Owing to the inherently robust nature of Type B shipping containers, attacks on transportation infrastructure and attacks involving capture of a shipment and use of a high energy explosives (such as a truck bomb similar to the one used in the Oklahoma City incident) would likely topple the container without breaching it or releasing radioactive material. Attacks using other military weapons, such as tank or aircraft fired weapons, are simply not reasonable possibilities. If a terrorist group could obtain and use such weapons, they would be much more likely to select targets where they could cause large numbers of immediate fatalities, rather than ones where they may be able to cause some latent fatalities.

Based on the above discussion, the NNPP considers the petitioner has provided no new technical information or other justification for the proposed regulatory changes. These proposed changes, including additional requirements for advance approval of routes, increased escort requirements for shipments by road and by rail (including requiring continuous, real time aircraft surveillance along certain rail segments), additional planning and scheduling requirements consistent with those required for special nuclear material shipments, and requiring all rail shipments to be made in dedicated trains, are simply not warranted. Such changes would greatly increase the cost and complexity of completing spent nuclear fuel and high level waste shipments without significantly increasing shipment security. The specific recommendations that suggest revising spent nuclear fuel shipment requirements to make them consistent with special nuclear material shipment requirements miss the point that special nuclear material is highly protected because of its potential use in making nuclear weapons, not because of its relatively minimal radiological impacts if dispersed.

Application of the proposed additional requirements for spent nuclear fuel and high level waste shipments would also serve to contribute to the incorrect perception that these shipments are more dangerous than other hazardous material shipments, and could even contribute to making them appear to be more attractive targets for terrorist attacks. In fact, owing to the robust Type B packagings used for spent nuclear fuel and high level waste shipments, these shipments involve less risk than other hazardous material shipments. We believe the incorrect perception is one that government organizations involved in making and/or regulating radioactive material shipments, including the NRC, should combat, not support. We recommend the NRC deny the petitioner's requests, and publish a statement in the Federal Register to reassure the public that the existing regulations ensure the safety of spent nuclear fuel and high level radioactive waste shipments.

We appreciate your consideration of these comments. If you have any questions, or would like to discuss these comments further, please contact me at 703-602-1750 or Elmer Naples of my staff at 703-602-8229.

Sincerely,



Thomas H. Beckett  
Deputy Director  
Naval Nuclear Propulsion Program

Copy to: page 5

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