

NUCLEAR REGULATORY COMMISSION

10 CFR Part 73

[Docket No. PRM-73-10]

[NRC-2000-0026]

State of Nevada; Denial of Portions of Petition for Rulemaking,
Consideration of the Remaining Portions in the Rulemaking Process

AGENCY: Nuclear Regulatory Commission.

ACTION: Closure of petition for rulemaking docket; Partial Denial.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is denying, in part, a petition for rulemaking (PRM 73-10) submitted by the State of Nevada on June 22, 1999. The NRC will consider the remainder of the petition in the rulemaking process. The petitioner requested that NRC amend its regulations governing safeguards for shipments of spent nuclear fuel against sabotage and terrorism. The petitioner also requested that the NRC conduct a comprehensive assessment of the consequences of terrorist attacks that have the capability of radiological sabotage, including attacks against transportation infrastructure used during nuclear waste shipments, attacks involving capture of nuclear waste shipments and use of high energy

explosives against a cask or casks, and direct attacks upon a nuclear waste shipping cask or casks using antitank missiles or other military weapons. This action closes the docket for PRM-73-10.

DATES: The docket for the petition for rulemaking PRM-73-10 is closed on **[INSERT DATE OF PUBLICATION OF FRN]**.

ADDRESSES: You can access publicly available documents related to this petition for rulemaking using the following methods:

Federal e-Rulemaking Portal: Public comments and supporting materials related to this petition for rulemaking can be found at the Federal rulemaking website <http://www.regulations.gov> by searching on Docket ID: NRC-2000-0026. Further NRC action on the remaining issues raised by this petition will be accessible at <http://www.regulations.gov> by searching on Docket ID NRC-2009-0163. Address questions about NRC dockets to Carol Gallagher (301) 492-3668; e-mail Carol.Gallagher@nrc.gov.

NRC's Public Document Room (PDR): The public may examine and have copied for a fee publicly available documents at the NRC's PDR, Room O-1F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland.

NRC's Agencywide Documents Access and Management System (ADAMS): Publicly available documents created or received at the NRC are available electronically at the NRC's Electronic Reading Room at <http://www.nrc.gov/reading-rm/adams.html>. From this page, the public can gain entry into ADAMS, which provides text and image files of NRC's public documents. If you do not have access to ADAMS or if there are problems in accessing the documents located in ADAMS, contact the NRC PDR reference staff at 1-800-397-4209, (301) 415-4737, or by email to pdr.resource@nrc.gov.

The NRC also tracks all rulemaking actions in the "NRC Regulatory Agenda: Semiannual Report" (NUREG-0936).

FOR FURTHER INFORMATION CONTACT: Naiem S Tanious, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone (301) 415-6103, e-mail *Naiem.Tanious@nrc.gov*.

SUPPLEMENTARY INFORMATION:

The Petition

The petition, dated June 22, 1999, was filed with NRC by the State of Nevada and assigned Docket No. PRM 73-10 on July 13, 1999. The NRC published a notice of receipt of a petition for rulemaking on September 13, 1999 (64 FR 49410). The petitioner (the State of Nevada) states that it is a corridor State for spent nuclear fuel (SNF) shipments, and has been a destination and origin state for SNF shipments to and from Federal research facilities. Nevada is also the potential host State for a Federal geologic repository and could become the ultimate destination for shipments of SNF and high-level radioactive waste.

The petitioner requests that NRC amend its regulations governing safeguards for shipments of spent nuclear fuel against sabotage and terrorism. Specifically, the petitioner requests seven amendments to 10 CFR Part 73:

(1) Clarification of the meaning of the term "hand-carried equipment" in 10 CFR 73.1(a)(1)(i)(D) to include: (a) one or more large military demolition devices, such as the U.S. Army M3A1 shaped charge weighing 40 pounds; (b) a significant quantity (limited only by the carrying capacity of the vehicle) of commercial explosives packaged in crates, boxes, suitcases, or other hand-carried containers; and (c) numerous man-portable antitank weapon systems such as the Carl Gustav M2 recoilless gun (weight 15 kg), the Milan antitank missile (weight 32 kg), and the infantry version of the TOW 2 antitank missile (weight 116 kg with tripod launcher);

(2) Clarify the definition of “radiological sabotage” in 10 CFR 73.2 to include actions against SNF shipments which are intended to cause a loss of shielding or a release of radioactive materials as well as those deliberate actions which cause, or are intended to cause economic damage or social disruption regardless of the extent to which public health and safety are actually endangered by exposure to radiation;

(3) Amend the advance route approval requirements in 10 CFR 73.37(b)(7) to specifically require shippers and carriers to identify primary and alternative routes which minimize highway and rail shipments through heavily populated areas, adopt the route selection criteria in NUREG-0561, and require shippers and carriers to minimize use of routes which fail to comply with the route selection criteria;

(4) Amend 10 CFR 73.37(c) to eliminate the differential armed escort requirements based on population for SNF shipments by road;

(5) Amend 10 CFR 73.37(d) to eliminate the differential armed escort requirements based on population for SNF shipments by rail;

(6) Amend 10 CFR 73.37(b) to make applicable to SNF shipments the 10 CFR 73.26(b)(1) planning and scheduling requirements for special nuclear material in transit; and

(7) Amend 10 CFR 73.37(d) to require that SNF rail shipments be made by dedicated trains.

In addition, the petitioner requests that NRC, in support of the aforementioned rulemaking, conduct a comprehensive assessment of the consequences of terrorist attacks that have the capability of radiological sabotage, including attacks against transportation infrastructure used during nuclear waste shipments, attacks involving capture of nuclear waste shipments and use of high energy explosives against a cask or casks, and direct attacks upon a nuclear waste shipping cask or casks using antitank missiles or other military weapons.

The petitioner’s rationale for requesting a rulemaking to better deter, prevent, and mitigate the consequences of any attempted radiological sabotage, as well as a comprehensive

assessment of the consequences of terrorist attacks is based on the following:

(1) The petitioner asserts that the thousands of shipments to a geologic repository will create opportunity for terrorist attacks or sabotage of spent fuel shipments. The petitioner contends that opportunity is created because the spent fuel shipments will be over long distances, many in number, regular and predictable, and to a fixed destination.

(2) The petitioner asserts that the means for mounting an attack are available. The petitioner contends that several varieties of high energy explosives are currently available including the M3A1 shaped charge, commercial shaped charges, and thousands of antitank weapons that have been produced world-wide in the last several years including the Milan and TOW 2 antitank missiles.

(3) The petitioner asserts that the spent fuel shipments may be attractive targets. The petitioner contends that a national repository may have a greater symbolic value to terrorists as a target than current reactor storage facilities, and that “enhanced symbolic value” may extend to spent fuel shipments. The petitioner also contends that a single facility with a large stockpile of spent fuel might be a more tempting target. Further, the petitioner suggests that a facility operated by the Department of Energy (DOE), the U.S. Government agency responsible for producing nuclear weapons, may have greater symbolic value to terrorists as a target than commercial storage facilities, and that “enhanced symbolic value” may extend to DOE’s shipments of spent fuel.

(4) The petitioner asserts that after 1984 when NRC last evaluated the adequacy of spent fuel transportation safeguards, the nature of the terrorist threat has changed significantly. The petitioner contends that during the past 17 years major changes have occurred, including: an increase in the lethality of terrorist attacks in the United States; an increase in serious terrorist attacks against transportation systems; and renewed concern about nuclear terrorism generally, and terrorist actions involving potential radioactive contamination specifically.

(5) The petitioner asserts that shipping casks are vulnerable to terrorist attack using high-

energy explosive devices. The petitioner contends that this vulnerability is caused by two developments: the capabilities and availability of explosive devices, especially antitank weapons, have increased significantly; and new shipping casks, developed to increase payloads without exceeding specified weight limits, appear to be more vulnerable to attack using commercial explosives or past, current, and future weapons systems. The petitioner perceives that after the early 1980s, portable antitank weapons have become more powerful, reliable, and available world-wide. The petitioner states that most of the antitank missiles, identified in its attachment, have warheads capable of completely perforating a truck cask and its spent fuel cargo, and deeply penetrating a rail cask and damaging its spent fuel cargo. The petitioner also states that spent fuel shipping casks are vulnerable to attack using military and commercial explosives, particularly a conical-shaped charge with an incendiary device. Lastly, the petitioner claims that shaped charges developed for use in oil and gas well perforating are particularly powerful, efficient, and stable.

Public Comments on the Petition

The notice of receipt of the petition for rulemaking invited interested persons to submit comments. During the comment period, which closed on January 28, 2000,¹ the NRC received 24 comment letters: 15 from States and agencies or counties within States; 2 from Federal agencies; and 1 each from the Nuclear Energy Institute, Western Governors Association, Northeast High-Level Radioactive Waste Transportation Task Force, Association of American

¹ The NRC extended the comment period, which originally was to close on November 29, 1999, to January 28, 2000 (64 FR 59684, November 3, 1999).

Railroads, Heartland Operation to Protect the Environment, an NRC licensee, and a private individual. Comment letter number 21 from the Agency for Nuclear Projects, State of Nevada provided additional information. The comments have been divided into three groups: (1) those supporting assessment only, (2) those supporting both assessment and rulemaking, and (3) those opposing both assessment and rulemaking.

Nine commenters support assessment only. They agree with the petitioner that the estimated risks and potential consequences to the public from a terrorist attack of spent fuel in transit should be made current, and if indicated, the regulations should be revised accordingly.

The State of Louisiana urges NRC to review and strengthen, where necessary, the applicable procedures and safeguards to ensure the security and safety of both the spent nuclear fuel shipments and the citizens that would be affected by any act of terrorism, sabotage, or more importantly, an accident which would result in the release of radioactive materials. Also, the State of Louisiana notes that the technology for tracking sensitive freight shipments is available and should be a required safeguard. For example, Automatic Vehicle Location Technology allows near real time tracking of vehicles.

The Department of Environmental Quality of the Commonwealth of Virginia indicates that it is reasonable for NRC to reevaluate its requirements for safeguarding spent fuel shipments against sabotage and terrorism.

The Department of Public Safety of the State of Oklahoma agrees that assessment of safeguards for the shipment of spent fuel and response to emergency situations during shipments should be current.

The Western Governors Association recommends that NRC: (1) reevaluate the adequacy of current physical protection regulations for transporting spent fuel, (2) conduct a comprehensive consequence assessment of attacks that have the potential for radiological sabotage, (3) create a stakeholder advisory group to assist NRC in the comprehensive

consequence assessment, and (4) publish a full report on all unclassified assessment findings.

The Nuclear Energy Institute concurs that NRC should complete a comprehensive assessment of credible threats of sabotage and terrorism on spent fuel in transit.

Six commenters support both assessment and rulemaking. They agree with the petitioner that the safeguards requirements for spent fuel in transit should be strengthened and that a proposed rulemaking effort should be supported by a comprehensive assessment of the potential consequences of sabotage or terrorist attack.

Nye County, Nevada asserts that there is a need for a comprehensive assessment of the consequences of terrorist attacks that covers the entire spectrum of nuclear waste and spent fuel shipments to a repository, and that the petition raises legitimate and substantial issues that should be fully explored in a proposed rulemaking.

Clark County, Nevada supports both assessment and rulemaking because it believes that NRC's standards for safety and security for spent fuel in transit are out of date.

Eureka County, Nevada asserts that the petition raises legitimate and substantial issues that should be fully explored in a notice and comment rulemaking.

The State of Utah agrees with the need to reevaluate requirements for safeguarding shipments of spent nuclear fuel due to the changing nature of threats involving terrorism and sabotage, wants any assessment to address the need for a more comprehensive and reliable system to track shipments, and recommends increased armed escort for shipments of spent nuclear fuel.

The State of Utah also asserts that the nature of the terrorist threat has significantly changed since NRC last assessed the adequacy of its spent fuel transportation safeguards regulations, and that the current regulations are predicated on outdated assessments.

Eight commenters oppose both assessment and rulemaking. They disagree with the petitioner that either an assessment or proposed rulemaking is necessary.

One licensee asserts that the existing safeguards regulations are adequate and no rulemaking change to Part 73 is necessary. Moreover, any assessment undertaken in response to the petition should consider the physical protection requirements for spent fuel shipments both in the context of all hazardous material shipments and in comparison to other targets for terrorist attack.

The Department of Emergency Services within the Commonwealth of Virginia acknowledges that terrorism poses one of the most challenging threats to public safety today and agrees that the possibility of such an attack involving spent fuel warrants serious consideration. However, this Department believes that NRC, the DOE, the U.S. Federal Bureau of Investigation (FBI), and the national security agencies should consider the issue of terrorism involving nuclear shipments as part of the overall domestic preparedness mission. Moreover, this Department states that changes in the nation's security programs and domestic preparedness must be based on sound risk assessment and threat analysis. When such an analysis results in additional risk factors, only then should resources be committed to making necessary regulatory changes.

The Northeast High-Level Radioactive Waste Transportation Task Force, representing nine States, asserts that transportation casks are very robust and do not make an attractive target, the nature of a terrorist threat has not changed significantly, and additional rulemaking on safeguards for spent fuel transportation is not necessary because current safeguards provide adequate protection. The Task Force points out that there are a high number of shipments routinely occurring without difficulty, spent fuel shipments in NRC certified casks have an excellent safety record, and 2380 safe shipments have occurred during the past 35 years without radiological release, sabotage, or terrorism. Moreover, leaving the spent fuel in place has undesirable features with respect to protecting public health and safety since most reactor storage sites are located near rivers, lakes, or sea shores.

The Association of American Railroads disagrees with the petitioner's assertion that "the NRC should specifically require shippers and carriers to identify primary and alternate routes that minimize highway and rail shipments through heavily populated areas." The Association points out that a premise of hazardous materials transportation is that transportation time should be minimized. Thus, routing to avoid heavily-populated areas would be counter productive by causing large increases in transportation time because routes around urban areas are almost always significantly more circuitous.

The DOE asserts that the petition does not offer compelling reasons for either a comprehensive assessment or rulemaking. DOE states that there is no evidence that either a reassessment or rulemaking would result in any measurable increase in public health or safety. DOE also states that their most recent sabotage analyses indicate that the current regulations adequately protect public health and safety and the environment. Moreover, the petition's reference to terrorist events throughout the world does not reflect the actual situation in the U.S. or mean that spent fuel shipments are actually terrorist targets. Recent studies by DOE show that the fundamental response of casks to offensive weapons has not dramatically changed. In addition, the estimated consequences of credible sabotage scenarios continue to be bounded by the consequences evaluated under severe accident conditions.

The Naval Nuclear Propulsion Program (NNPP), Department of the Navy, states that the petitioner has not provided sufficient justification for the requested actions. Since 1957, the NNPP has made 700 shipments of naval spent fuel by rail, all safely. There have not been any accidents, releases of radioactivity, or acts of terrorism or sabotage. Also, the NNPP disagrees that the nature of the terrorist threat has changed substantially from that which the existing regulations are designed to protect against. Moreover, simply listing U.S. terrorist attacks of the past two decades and speculating about increased concerns for terrorist attacks against spent fuel shipments does not support the position that regulatory changes are necessary. NNPP

further states that if a terrorist group could obtain and use military weapons, they would be likely to select targets where they could cause large numbers of immediate fatalities. Furthermore, NNPP asserts that the petition provides neither new technical information nor other justification for the proposed regulatory changes.

The NRC reviewed and considered the comments in its decision to deny, in part, the petition for rulemaking and to consider the remainder of the petition in the rulemaking process. In reaching its decision, the NRC has also considered the intervening events since 1999, when the petition was filed and the comments were received, including the terrorist attacks of September 11, 2001, and since those attacks, the various security assessments that have been conducted and the various security measures that have been put in place. The NRC's analysis is set forth below.

Petition Resolution

The NRC is denying the following two specific requests from the petitioner: (1) the request for amending the design basis threat (DBT) for radiological sabotage to include a clarification in the meaning of the phrase "hand-held equipment" in 10 CFR 73.1(a)(i)(D) and to amend the DBT to include use of explosive devices and other weapons larger than those commonly considered to be hand-carried or hand-held, and the use of vehicles other than four wheel drive civilian land vehicles; and (2) the request that the NRC conduct comprehensive security assessment studies. The remaining petition requests are being considered in the NRC rulemaking process.

Petition Requests that are being denied:

1. Amending the DBT to Clarify the Meaning of Hand-carried Equipment and to Include the Use of Explosive Devices, Other Weapons Larger Than Those Considered Hand-carried, and Vehicles Other Than 4-wheel Drive

The Petitioner requested that the NRC clarify the meaning of the phrase “hand-carried equipment” in 10 CFR 73.1(a)(i)(D) to include: (a) one or more large military demolition devices, such as the U.S. Army M3A1 shaped charge weighing 40 pounds; (b) a significant quantity (limited only by the carrying capacity of the vehicle) of commercial explosives packaged in crates, boxes, suitcases, or other hand-carried containers; and (c) man-portable antitank weapon systems such as the Carl Gustav M2 recoilless gun (weight 15 kg), the Milan antitank missile (weight 32 kg), and the infantry version of the TOW 2 antitank missile (weight 116 kg with tripod launcher).

The NRC is denying this request for rulemaking. On March 19, 2007, the Commission issued a final rule amending 10 CFR 73.1 (72 FR 12705), Design Basis Threat. This rule contained the Design Basis Threat with which affected licensees must comply. However, the Commission was careful to set forth rule text that did not compromise licensee security, but also balances the necessity to keep the public informed of the types of attacks against which nuclear power plants and Category I facilities are required to defend. Specific information on adversary capabilities (e.g., specific weapons, ammunition type, etc) are contained in adversary characteristics documents which contain classified or Safeguards Information (SGI).

The technical bases for the adversary characteristic documents are derived largely from intelligence information. They contain classified or SGI information which cannot be publicly disclosed. These documents must be withheld from public disclosure and made available on a need-to-know basis to those who are cleared for access. Consequently, the petitioner’s

suggested changes to this regulation would be inconsistent with the Commission's recent revision of § 73.1.

The Petitioner also requested that the NRC consider amending the DBT to include use of explosive devices and other weapons larger than those commonly considered to be hand-carried or hand-held, and the use of vehicles other than four wheel drive civilian land vehicles. Well-trained and dedicated adversaries could conceivably obtain and use military attack vehicles or military aircraft armed with bombs, missiles, or other powerful weapons.

The NRC is denying this request. The specific details of the adversary's capabilities are now contained in adversary characteristics documents which contain classified or SGI information. The adversary characteristics documents are derived largely from intelligence information. These documents must be withheld from public disclosure and made available on a need to know basis to those who are cleared for access. The petitioner's suggested changes to this regulation would not be consistent with the Commission's recent revision to § 73.1.

2. Comprehensive Assessment of the Consequences of Terrorist Attacks

The petitioner requested that the NRC conduct a comprehensive assessment of the consequences of terrorist attacks that have the capability of radiological sabotage to include: attacks against transportation infrastructure used by nuclear waste shipments, attacks involving capture of a nuclear waste shipment and use of high energy explosives against the cask, and direct attacks upon a nuclear waste shipping cask using antitank missiles.

The NRC is denying this request because it does not involve (i.e., contain) a request to amend, create, or revise the NRC's existing regulations, as is required by the provisions of 10 CFR 2.802, "Petition for Rulemaking." Instead of requesting changes to the NRC's regulations (as it has specified for other topics elsewhere in its petition) the Petitioner has requested the NRC complete a comprehensive assessment. A comprehensive assessment is

not a change to the language of the NRC's regulations.

It is important to note however, that relevant studies (which accomplish the objectives of the Petitioner) were performed at the request of the Commission following the September 11, 2001, terrorist attacks. As a result of these studies, the staff has developed a security assessment decision-making framework to be used as a tool for NRC to determine the appropriate level of security measures and mitigating strategies required for a given threat scenario, including threat scenarios involving spent fuel storage casks and certified radioactive material transportation package designs.

Consideration in Rulemaking

The NRC will consider the issues raised in PRM-73-10 and the remainder of the petitioner's requests in a proposed SNF transportation security rulemaking, which is expected to be available for public comment in 2010. The NRC has determined that the underlying technical considerations regarding the physical security of SNF shipments are sufficiently related to this ongoing rulemaking activity; therefore, the issues raised in PRM-73-10, other than the requests that are being denied, are being considered in the rulemaking activity.

Specifically, the NRC is considering a proposed SNF transportation security rulemaking which will require that licensees plan and coordinate SNF shipments, including routes and safe havens, with the States through which the shipment will pass. The proposed rulemaking would also require including armed escorts along the entire length of the route, continuous and active monitoring of the SNF shipment, redundant communications capabilities among the transport, local law enforcement agencies and a licensee movement control center, and planning and development of normal and contingency procedures.

The NRC is continuing work to develop this proposed rulemaking. Although the NRC will consider the issues raised in the petition, other than the requests being denied, the petitioner's

concerns may not be addressed exactly as the petitioner has requested. During the rulemaking process, the NRC will solicit comments from the public and will consider all comments before issuing a final rule. If the NRC does not issue a proposed rule, the NRC will issue a document in the *Federal Register* that addresses why the petitioner's requested rulemaking changes were not adopted by the NRC.

For the reasons provided above, the NRC is denying the petition, in part, and considering the remainder of the petitioner's requests in the NRC's ongoing rulemaking process. With this action the NRC closes the docket for PRM-73-10.

Dated at Rockville, Maryland, this 10th day of November, 2009.

For the Nuclear Regulatory Commission.

/RA/

R. W. Borchardt,
Executive Director for Operations

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For the reasons provided above, the NRC is denying the petition, in part, and considering the remainder of the petitioner's requests in the NRC's ongoing rulemaking process. With this action the NRC closes the docket for PRM-73-10.

Dated at Rockville, Maryland, this 10th day of November, 2009.

For the Nuclear Regulatory Commission.

/RA/
R. W. Borchardt,
Executive Director for Operations

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