RULEMAKING ISSUES
(Notation Vote)

October 31, 2009 SECY-09-0162

FOR: The Commissioners

FROM: R. W. Borchardt
Executive Director for Operations

SUBJECT: PROPOSED RULE: 10 CFR 73.37, "PHYSICAL PROTECTION OF IRRADIATED FUEL IN TRANSIT" (RIN 3150-AI64)

PURPOSE:

To request Commission approval to publish a proposed rule, in the *Federal Register*, that would amend Title 10 of the Code of Federal Regulations (CFR) Part 73 security requirements for spent nuclear fuel in transit (for purposes of this rulemaking, the terms "irradiated reactor fuel" and "spent nuclear fuel" are used interchangeably).

SUMMARY:

The U.S. Nuclear Regulatory Commission (NRC) staff is recommending that the Commission approve a proposed rule that would amend its security regulations pertaining to the transport of spent nuclear fuel. This proposed rulemaking would establish generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001. The proposed rulemaking would establish the acceptable performance standards and objectives for the protection of spent nuclear fuel shipments from theft, diversion, or radiological sabotage. The proposed amendments would apply to those licensees authorized to possess or transport spent nuclear fuel. The staff recognizes that the proposed rule may place additional requirements on licensees, and will be sensitive to factoring implementation timing into considerations for any final rule. The proposed security requirements would also address, in part, a petition for rulemaking (PRM-73-10) from the State of Nevada that requests that the NRC strengthen the regulations governing the security of spent nuclear fuel shipments against malevolent acts.

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BACKGROUND:

On June 15, 1979, the NRC published in the *Federal Register* (44 FR 34466) an interim final rule that established its first requirements for the physical protection of spent nuclear fuel in transit. The interim final rule added 10 CFR 73.37, "Requirements for Physical Protection of Irradiated Reactor Fuel in Transit." After considering public comments, a final rule was published on June 3, 1980 (45 FR 37399).

The current 10 CFR 73.37 has changed little since its promulgation in 1980. These regulations require licensees to put in place a physical protection system for spent nuclear fuel shipments that meets the following objectives: (1) minimize the possibilities for radiological sabotage of spent nuclear fuel shipments, especially within heavily populated areas, and (2) facilitate the location and recovery of spent nuclear fuel shipments that may have come under the control of unauthorized persons. The regulation also provides for: (1) the early detection and assessment of attempts to gain unauthorized access to or control over spent nuclear fuel shipments, (2) the notification to the appropriate response forces of any sabotage events, and (3) the impeding of attempts at radiological sabotage of spent nuclear fuel shipments in heavily populated areas or attempts to illicitly move such shipments into heavily populated areas.

After the terrorist attacks of September 11, 2001, the Commission determined that the threat environment required that additional security requirements for spent nuclear fuel shipments be implemented on an expedited basis. In a Staff Requirements Memorandum (SRM) dated May 2, 2002, the Commission directed the staff to develop orders that imposed additional security requirements on spent nuclear fuel shipments for transportation by highway and rail. The documents relative to this issue are:

- COMSECY-02-0026, "Interim Compensatory Measures, Orders and Communications Plan for Transportation of Spent Nuclear Fuel and Large Quantity Shipments of Radioactive Materials," dated May 31, 2002, ADAMS Package Number ML021360656 and ADAMS Accession Number ML021360658; and
- COMSECY-02-0044, "Final Interim Compensatory Measures for the Transportation of Spent Nuclear Fuel," dated August 15, 2002, ADAMS Package Number ML022200710 and ADAMS Accession Number ML022210080.

The EA-02-109 Order, "Issuance of Order for Interim Safeguards and Security Compensatory Measures for the Transportation of Spent Nuclear Fuel Greater than 100 Grams" was issued on October 3, 2002. The order was issued to licensees who had shipped or received spent nuclear fuel within 3 years and who planned to ship or receive spent nuclear fuel in the foreseeable future. The orders were issued as immediately effective under NRC's authority to protect the common defense and security under the Atomic Energy Act of 1954 (AEA), as amended.

The staff is proposing to amend its security regulations pertaining to the transport of spent nuclear fuel. This proposed rulemaking would establish generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001. The proposed rulemaking would establish the acceptable performance standards and objectives for the protection of spent nuclear fuel shipments from theft, diversion, or radiological sabotage. The proposed security regulation would also address, in part, a State of Nevada petition for rulemaking (PRM-73-10) that

requested that the NRC initiate rulemaking to strengthen the regulations governing the security of spent nuclear fuel shipments against malevolent acts.

DISCUSSION:

The proposed rulemaking would establish generically applicable security requirements similar to those previously imposed by orders issued after the terrorist attacks of September 11, 2001. The proposed rulemaking would also add several new requirements not derived directly from the security order requirements, but developed as a result of insights gained by performing security assessments of potential security vulnerabilities associated with spent nuclear fuel in transit. Also, the proposed rulemaking would address, in part, the requests for NRC rulemaking raised by PRM-73-10.

Enhanced Security Orders:

The specifics of the EA-02-109 Order are protected as Safeguards Information. Their details cannot be discussed in this paper. In general, the additional security requirements resulted in enhancements in the following areas: preplanning and coordination with States and local law enforcement agencies; improved communications among movement control personnel; the development of normal and contingency procedures; and more thorough background investigations of individuals associated with the spent nuclear fuel shipment. The proposed rule would address all of these areas.

Nevada Petition:

By a letter dated June 22, 1999, the State of Nevada submitted a rulemaking petition requesting that the NRC initiate rulemaking to strengthen its regulations for the physical protection of spent nuclear fuel shipments against radiological sabotage and terrorist acts. The NRC docketed the petition on July 13, 1999, as Docket No. PRM-73-10. The NRC published a notice of receipt of the petition, which requested public comment, on September 13, 1999 (64 FR 49410). The PRM-73-10 is available at ADAMS Accession Number ML092540603. The Commission review of this petition was tabled following the terrorist attacks of September 11, 2001. This proposed rulemaking would consider and address, in part, PRM-73-10.

In PRM-73-10, Nevada requested that the NRC: (1) clarify the meaning of the term "hand-carried equipment" in 10 CFR 73.1(a)(1)(i)(D); (2) clarify the definition of the term "radiological sabotage" in 10 CFR 73.2 to include actions against spent nuclear fuel shipments which are intended to cause a loss of shielding, release of radioactive materials or cause economic damage or social disruption, regardless of the success or failure of the action; (3) amend the advance route approval requirements in 10 CFR 73.37(b)(7) to require shippers and carriers of spent nuclear fuel to identify primary and alternative routes which avoid heavily populated areas; (4) require armed escorts along the entire road shipment route by eliminating the differential based on population in 10 CFR 73.37(c); (5) require armed escorts along the entire rail shipment route by eliminating the differential based on population in 10 CFR 73.37(d); (6) amend 10 CFR 73.37(b) by adopting additional planning and scheduling requirements for spent nuclear fuel shipments that are the same as those for formula quantities of special nuclear material found in 10 CFR 73.26(b); (7) amend 10 CFR 73.37(d) to require that rail shipments of spent nuclear fuel be made in dedicated trains; and (8) conduct a comprehensive

assessment of the consequences of terrorist attacks that have the capability of radiological sabotage.
In this proposed rulemaking, the NRC will consider the above items raised in PRM-73-10, except for the first and eighth items, namely, clarification of the meaning of the term "hand-carried equipment" and the conducting of a comprehensive assessment of the consequences of terrorist attacks that have the capability of radiological sabotage. The first and eighth items of PRM-73-10 will be addressed in a separate NRC notice. The remaining items are addressed as a part of this proposed rulemaking and the public is invited to comment on how the proposed rulemaking address these issues.

Background Investigations for Unescorted Access to Spent Nuclear Fuel Shipments §73.38

The staff is proposing to add a new section to address background investigations for individuals granted unescorted access to spent nuclear fuel shipments. The proposed requirements are in accordance with section 652 of the Energy Policy Act of 2005 (EPAct). Section 652 of the EPAct amended Section 149 of the AEA to require fingerprinting - a Federal Bureau of Investigation identification and criminal history records check for any individual who is permitted unescorted access to NRC regulated materials or properties that the Commission determines to be of such significance to public health and safety or the common defense and security as to warrant fingerprinting and background checks. Section 149 of the AEA also requires that "all fingerprints obtained by a licensee or applicant…shall be submitted to the Attorney General of the United States through the Commission for identification and a criminal history records check."

The main objective of the background investigation requirements is to ensure that individuals granted unescorted access to NRC regulated materials or properties are trustworthy and reliable and do not constitute an unreasonable risk to the public health and safety or common defense and security. By the proposed requirements, the staff is recommending to the Commission that individuals granted unescorted access to spent nuclear fuel shipments be made subject to the Section 149 background investigation requirements. The proposed provisions are similar to those in paragraph (d), *Background Investigations*, of §73.56, *Personnel access authorization requirements for nuclear power plants.*

Strategic Goals and Objectives

The proposed revisions are consistent with NRC strategic goals and performance goals. They support NRC's strategic goals of ensuring the protection of public health and safety and the environment, and of ensuring the secure use and management of radioactive materials. The proposed revisions will eliminate the need to issue and re-issue security orders for spent nuclear fuel shipments to licensees. As such, the proposed revisions will support the NRC's organizational excellence objectives of ensuring that its actions are efficient, effective, realistic, and timely. In support of NRC's openness strategy, the staff is proposing a 75-day public comment period.

LICENSEE IMPLEMENTATION ISSUES:

The staff recognizes that NRC licensees have been required to implement a number of security requirements in the past year, and will be required to implement additional requirements in the

near future. Two examples are: (1) the "Protection of Safeguards Information (SGI)," amendments, 73 FR 63596, October 24, 2009, which were effective on February 23, 2009; and (2) the "Power Reactor Security Requirements," amendments, 74 FR 13926, March 27, 2009, which were effective on May 26, 2009, and compliance is required by March 31, 2010 for current operating Part 50 licensees. The proposed spent nuclear fuel in transit rule may also place additional security requirements on NRC licensees. The staff will be sensitive to the implementation timing of the additional requirements in the proposed rule to factor the impact on licensees into the final rule if the proposed requirement is approved by the Commission.

AGREEMENT STATE ISSUES:

The regulation of spent nuclear fuel transit is an activity reserved to the Commission under the AEA, as amended. This rulemaking will not have any impact on Agreement States' regulations. Therefore, Agreement States will not need to make conforming changes to their regulations.

COMMITMENTS:

In conjunction with this proposed rulemaking, staff is revising NUREG-0561, "Requirements for Physical Protection of Irradiated Reactor Fuel in Transit," which was published in June 1980. This document provides general guidance to licensees concerning the physical protection of spent nuclear fuel shipments. The staff plans to publish NUREG-0561 for public comment during the public comment period on this proposed rule.

RECOMMENDATIONS:

That the Commission:

1. Approve for publication, in the *Federal Register*, the proposed amendments to Part 73

2. Note:

    a. That the proposed amendments will be published in the *Federal Register*, allowing a 75-day public comment period.

    b. That the Chief Counsel for Advocacy of the Small Business Administration will be informed of the certification and the reasons for it, as required by the Regulatory Flexibility Act, 5 U.S.C. 605(b).

    c. That a draft Regulatory Analysis has been prepared for this rulemaking (Enclosure 2).

    d. That a draft Environmental Assessment has been prepared for this rulemaking (Enclosure 3).

    e. That appropriate Congressional committees will be informed of this action.

    f. That a press release will be issued by the Office of Public Affairs when the proposed rulemaking is filed with the Office of the Federal Register.

g. Office of Management and Budget (OMB) review is required and a clearance package will be forwarded to OMB on or immediately after the date the proposed rule is published in the *Federal Register*.

RESOURCES:

Resources for FY 2010 were approved for 1.6 FTE. Resources for FY 2011 have been requested for .5 FTE.

COORDINATION:

The Office of the General Counsel has no legal objection to the proposed rulemaking. The Office of the Chief Financial Officer has reviewed this Commission paper for resource implications and has no objections. The rule suggests changes in information collection requirements that must be submitted to OMB on or immediately after the date the proposed rule is published in the *Federal Register*.

/RA Bruce S. Mallett for/

R. W. Borchardt
Executive Director
for Operations

Enclosures:
1. *Federal Register* Notice
2. Draft Regulatory Analysis
3. Draft Environmental Assessment

[7590-01-P]

NUCLEAR REGULATORY COMMISSION

10 CFR Part 73

RIN: 3150-AI64
[NRC-2009-0163]

Physical Protection of Irradiated Reactor Fuel in Transit

AGENCY: Nuclear Regulatory Commission.

ACTION: The proposed rule.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is proposing to amend its security regulations pertaining to the transport of irradiated reactor fuel (for purposes of this rulemaking, the terms “irradiated reactor fuel” and “spent nuclear fuel” are used interchangeably). This proposed rulemaking would establish generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001. The proposed rulemaking would establish the acceptable performance standards and objectives for the protection of spent nuclear fuel shipments from theft, diversion, or radiological sabotage. The proposed amendments would apply to those licensees authorized to possess or transport spent nuclear fuel. The proposed security requirements would also address, in part, a petition for rulemaking from the State of Nevada (PRM-73-10) that requests that the NRC strengthen the regulations governing the security of spent nuclear fuel shipments against malevolent acts.

DATES: The comment period expires (**insert 75 days from date of publication**). Submit comments specific to the information collection aspects of this rule by (**insert 30 days from date of publication**). Comments received after this date will be considered if practical to do so, but the NRC is able to assure consideration only for comments received on or before this date.

ADDRESSES: You may submit comments by any one of the following methods. Please include the Document ID: NRC-2009-0163 in the subject line of your comments. Comments on rulemakings submitted in writing or electronic form will be posted on the NRC website and on the Federal rulemaking website, regulations.gov. Because your comments will not be edited to remove any identifying or contact information, the NRC cautions you against including any information in your submission that you do not want to be publicly disclosed.

The NRC requests that any party soliciting or aggregating comments received from other persons for submission to the NRC inform those persons that the NRC will not edit their comments to remove any identifying or contact information, and therefore, they should not include any information in their comments that they do not want publicly disclosed.

Federal Rulemaking Website: Go to http://www.regulations.gov and search for documents filed under Docket ID: NRC-2009-0163. Address questions about NRC dockets to Carol Gallagher 301-415-5905; e-mail Carol.Gallager@nrc.gov .

Mail comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, ATTN: Rulemakings and Adjudications Staff. **E-mail comments to:** Rulemaking.Comments@nrc.gov. If you do not receive a reply e-mail confirming that we have received your comments, contact us directly at (301) 415-1677.

Hand deliver comments to: 11555 Rockville Pike, Rockville, Maryland 20852, between 7:30 am and 4:15 pm during Federal workdays. (Telephone 301-415-1677)

Fax comments to: Secretary, U.S. Nuclear Regulatory Commission at 301-415-1101.

You may submit comments on the information collections by the methods indicated in the Paperwork Reduction Act Statement.

You can access publicly available documents related to this document using the following methods: **NRC's Public Document Room (PDR):** The public may examine and have copied for a fee publicly available documents at the NRC's PDR, Public File Area Room O F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland.

NRC's Agencywide Document 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's PDR reference staff at 1-800-397-4209, or 301-415-4737, or by e-mail to PDR.Resource@nrc.gov.

Federal Rulemaking Website: Public comments and supporting materials related to this proposed rule can be found at http://www.regulations.gov by searching on Docket ID: **NRC-2009-0163.**

FOR FURTHER INFORMATION CONTACT: Cardelia H. Maupin, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Telephone 301-415-2312, e-mail, Cardelia.Maupin@nrc.gov.

SUPPLEMENTARY INFORMATION:

XII. Regulatory Flexibility Certification

XIII. Backfit Analysis

I. Background

A. Pre-September 11, 2001

On June 15, 1979, the NRC published in the *Federal Register* (44 FR 34466) an interim final rule that established its first requirements for the physical protection of spent nuclear fuel in transit. The interim final rule added 10 CFR 73.37, "Requirements for Physical Protection of Irradiated Reactor Fuel in Transit" to 10 CFR Part 73. After considering public comments, the Commission affirmed the interim final rule on June 3, 1980 (45 FR 37399).

The current 10 CFR 73.37 has changed little since its promulgation in 1980. These regulations require licensees to establish a physical protection system for spent nuclear fuel shipments that meets the following objectives: (1) minimize the possibilities for radiological sabotage of spent nuclear fuel shipments, especially within heavily populated areas, and (2) facilitate the location and recovery of spent nuclear fuel shipments that may have come under the control of unauthorized persons. The regulation also provides for: (1) the early detection and assessment of attempts to gain unauthorized access to or control over spent nuclear fuel shipments, (2) the notification to the appropriate response forces of any sabotage events, and (3) the impeding of attempts at radiological sabotage of spent nuclear fuel shipments in heavily populated areas or attempts to illicitly move such shipments into heavily populated areas.

Other Commission regulations support the protection of spent nuclear fuel in transit. The regulations in 10 CFR 73.72, "Requirement for Advance Notice of Shipment of Formula Quantities of Strategic Special Nuclear Material, Special Nuclear Material of Moderate Strategic

Significance, or Irradiated Reactor Fuel" require licensees to notify the NRC in advance about shipments of spent nuclear fuel. The regulations in 10 CFR Part 71, "Packaging and Transportation of Radioactive Material," establish requirements for packages used to transport spent nuclear fuel.

This proposed rulemaking would consider and address, in part, a petition for rulemaking submitted by the State of Nevada. By a letter dated June 22, 1999, the State of Nevada submitted a petition for rulemaking requesting that the NRC strengthen its regulations governing the security of spent nuclear fuel shipments against malevolent acts. The NRC docketed the petition on July 13, 1999, as Docket No. PRM-73-10 (PRM-73-10). The NRC published a notice of receipt of petition and a request for public comment on September 13, 1999 (64 FR 49410). The Commission review of this petition was tabled following the terrorist attacks of September 11, 2001. This proposed rulemaking would consider and address certain requests for NRC rulemaking made in PRM-73-10.

B. Post-September 11, 2001

Although the current 10 CFR 73.37 has changed little since its promulgation in 1980, there have been significant changes in the threat environment. The terrorist attacks of September 11, 2001, heightened concerns about the use of risk-significant radioactive materials in a malevolent act. After the terrorist attacks of September 11, 2001, the NRC issued a series of security-related orders to specific licensees. In the area of spent nuclear fuel transit security, the orders were issued to licensees who ship or receive, or were planning to ship or receive, spent nuclear fuel. The orders were issued as immediately effective under NRC's authority to protect the common defense and security under the Atomic Energy Act of 1954, as amended (AEA). The requirements put in place by the orders supplement the existing

regulatory requirements. These additional security requirements are primarily intended to ensure that spent nuclear fuel is shipped in a manner that protects the common defense and security and the public health and safety.

II. Discussion

A. What Action is the NRC Taking?

The NRC is proposing amendments to its regulations to enhance the security requirements that apply to the transportation of spent nuclear fuel. This proposed rulemaking would establish generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001. The proposed rulemaking would also add several new requirements not derived directly from the security order requirements, but developed as a result of insights gained by performing security assessments of potential security vulnerabilities associated with spent nuclear fuel in transit. Also, the proposed rulemaking would address, in part, the requests for NRC rulemaking raised by PRM-73-10.

The proposed requirements would establish acceptable performance objectives for the protection of spent nuclear fuel in transit from sabotage, theft, or diversion for malevolent use. These requirements would ensure that spent nuclear fuel is shipped in a manner that protects the common defense and security and public health and safety.

B. Why Revise the Requirements?

After the attacks of September 11, 2001, the NRC re-evaluated its security requirements for spent nuclear fuel in transit. From this effort, additional measures were identified that would

improve security. The additional security measures deemed immediately necessary were issued as orders and supplemented existing regulations. The orders are not publically available because they contain detailed security requirements that are designated as Safeguards Information (SGI). The proposed revisions are based on the NRC efforts undertaken since the events of September 11, 2001, including issuance of additional security requirements by orders, insights gained from implementation of the orders, insights gained by performing security assessments of potential security vulnerabilities associated with spent nuclear fuel transportation, and to reflect portions of the State of Nevada's Petition for Rulemaking (PRM-73-10).

C. What is Requested by the State of Nevada in its Petition for Rulemaking (PRM-73-10)?

By a letter dated June 22, 1999, the State of Nevada submitted a rulemaking petition (docketed as PRM-73-10) requesting that the NRC initiate rulemaking to strengthen its regulations for the physical protection of spent nuclear fuel shipments against radiological sabotage and terrorist acts. The NRC published a notice of receipt of petition and a request for public comment on September 13, 1999 (64 FR 49410). The Commission review of this petition was tabled following the terrorist attacks of September 11, 2001.

In PRM-73-10, Nevada requested that the NRC: (1) clarify the meaning of the term "hand-carried equipment" in 10 CFR 73.1(a)(1)(i)(D); (2) clarify the definition of the term "radiological sabotage" in 10 CFR 73.2 to include actions against spent nuclear fuel shipments which are intended to cause a loss of shielding, release of radioactive materials or cause economic damage or social disruption, regardless of the success or failure of the action; (3) amend the advance route approval requirements in 10 CFR 73.37(b)(7) to require shippers and carriers of spent nuclear fuel to identify primary and alternative routes which avoid heavily

populated areas; (4) require armed escorts along the entire road shipment route by eliminating the differential based on population in 10 CFR 73.37(c); (5) require armed escorts along the entire rail shipment route by eliminating the differential based on population in 10 CFR 73.37(d); (6) amend 10 CFR 73.37(b) by adopting additional planning and scheduling requirements for spent nuclear fuel shipments that are the same as those required for formula quantities of special nuclear material by 10 CFR 73.26(b); (7) amend 10 CFR 73.37(d) to require that rail shipments of spent nuclear fuel be made in dedicated trains; and (8) conduct a comprehensive assessment of the consequences of terrorist attacks that have the capability of radiological sabotage.

In this proposed rulemaking, the NRC will consider the above items raised in PRM-73-10, except for the first and eighth items, namely, clarification of the meaning of the term “hand-carried equipment” and the conducting of a comprehensive assessment of the consequences of terrorist attacks that have the capability of radiological sabotage. The first and eighth items of PRM-73-10 will be addressed in a separate NRC notice. The remaining items are addressed below:

PRM-73-10, Item 2: Clarify the definition of the term “radiological sabotage” in 10 CFR 73.2, “Definitions,” and amend it to expressly include “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.”

The staff considers that the existing definition already encompasses actions of the type described by the Petitioner. However, the NRC agrees that clarification may be useful. The NRC is addressing this petition item by clarifying the definition of radiological sabotage in the supporting guidance document associated with the proposed rule.

PRM-73-10, Item 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." Also, as part of this request, PRM-73-10 stated that NRC should consider adopting the route selection criteria in NUREG-0561, *Requirements for Physical Protection of Irradiated Reactor Fuel in Transit*, as part of the regulations, and specifically require shippers and carriers to minimize use of routes which fail to comply with the route selection criteria.

Licensees must implement U.S. Department of Transportation (DOT) routing requirements when shipping spent nuclear fuel. The staff considered incorporating the route selection criteria in NUREG-0561, but determined that implementing such criteria may cause conflicts with DOT requirements and recommendations. Instead, the NRC is addressing the goal of minimizing spent nuclear fuel shipments through heavily populated areas in the proposed rulemaking. The proposed revisions to 10 CFR 73.37 would require licensees to preplan and coordinate their shipments with the affected States. This issue is discussed below under "Why Require Shipment Preplanning and Coordination with States?" Combining the NRC proposed requirements, which includes State involvement in licensees' planning activities, with the requirements of DOT is expected to minimize movement of spent nuclear fuel through heavily populated areas.

PRM-73-10, Items 4 and 5: The current regulations, 10 CFR 73.37(c) and (d), for road and rail shipments, respectively, require armed escorts in heavily populated areas, but not in other areas along the route. PRM-73-10 requested that the NRC eliminate these differential armed escort requirements based upon population for both road and rail spent nuclear fuel shipments.

The proposed sections 73.37(c) and (d) reflect these PRM-73-10 requests. The differentiation of security requirements based upon population causes potential areas of

vulnerability along the shipment route for theft, diversion, or radiological sabotage. The proposed rule would require that the same security requirements for heavily populated areas apply along the entire route for road and rail shipments, and at any U.S. ports where vessels carrying spent fuel shipments are scheduled to stop.

PRM-73-10, Item 6: Amend 10 CFR 73.37(b) by adopting additional planning and scheduling requirements for spent nuclear fuel shipments that are the same as those required for formula quantities of special nuclear material by 10 CFR 73.26(b). The regulations in 10 CFR 73.26(b) require that shipments be scheduled to avoid delays and stops, and to ensure timely delivery of the shipment.

The NRC agrees that improvements are needed in the planning and coordination of shipments and has addressed this concern in the proposed amendment. This issue is discussed below under "Why Require Shipment Preplanning and Coordination with States?"

PRM-73-10, Item 7: Amend 10 CFR 73.37(d) to require that all spent nuclear fuel rail shipments to be made in dedicated trains.

The same NRC security requirements would apply to a spent nuclear fuel rail shipment, regardless of whether the shipment was made using a dedicated train or a mixed-use train. In either case, the licensee making the shipment would be required to ensure that the security protection measures (both hardware and personnel) required by the NRC's regulations would be present to provide the requisite high assurance of protection of public health and safety and the common defense and security during the entire duration of the shipment. The NRC considers the same level of security will be obtained regardless of whether the shipment is made in a dedicated train or mixed-use train. Thus, this item is not addressed as a part of the proposed rulemaking.

The NRC invites comments on its proposed disposition of items 2 through 7 of PRM-73-

10 as part of its consideration of this proposed rule. Comments should be sent to the address listed under the "ADDRESSES" heading of this document. The PRM-73-10 is available at ADAMS Accession Number: ML092540603 and the NRC's September 13, 1999, notice of receipt of petition and request for public comments (64 FR 49410) is available on the *Federal Register's* website, http://www.gpoaccess.gov/fr/index.html.

D. Why Require Procedures and Training for the Security of Spent Nuclear Fuel In Transit?

The proposed §§ 73.37(b)(3)(v) and (b)(4) would expressly require that licensees shipping spent nuclear fuel develop normal and contingency procedures. These procedures would cover notifications; communication protocols; loss of communication; and responses to actual, attempted, or suspicious activities. The proposed revisions would also require drivers, accompanying personnel, railroad personnel, and other movement control personnel to be adequately trained in normal and contingency procedures. These proposed requirements would ensure that all personnel associated with the shipment are prepared to prevent the theft, diversion, or radiological sabotage of spent nuclear fuel shipments. The proposed revisions would address, in part, PRM-73-10 items (3) and (6).

E. Why Require A Telemetric Position Monitoring System or an Alternative Tracking System for Continuous Monitoring of Spent Nuclear Fuel Shipments?

The current rule, at 10 CFR 73.37(b)(4), requires that the licensee's physical protection plan include a communications center, which will be staffed continuously by at least one individual who will monitor the progress of the spent fuel shipment. The proposed rule would reflect the availability of new technology and as such, the ability to have more active control over the shipment by the licensee. The proposed § 73.37(b)(3) would replace the term

"communications center" with the term "movement control center." The proposed § 73.37(b)(3)(ii) would also require that the movement control center be staffed continuously by at least one individual, who will actively monitor the progress of the spent nuclear fuel shipment and who has the authority to direct the physical protection activities. The proposed § 73.37(b)(3)(iii) would specify that the movement control center must monitor the shipment continuously, i.e., from the time of delivery of the shipment to the carrier for transport until safe delivery of the shipment at its final destination, and must immediately notify the appropriate agencies in the event of a safeguards event in accordance with the provisions of 10 CFR 73.71.

In addition, the proposed §§ 73.37(c)(5) and (d)(4), for road and rail shipments respectively, would require movement control centers to use a telemetric position monitoring system or an alternative tracking system to monitor the location and status of shipments at all times, which would provide a real time indication of any potential threats. A telemetric position monitoring system is a data transfer system that captures information by instrumentation and/or measuring devices about the location and status of a transport vehicle or package between the departure and destination locations. The gathering of this information permits remote monitoring and reporting of the location of a transport vehicle or package. Global positioning systems (GPS) and radiofrequency identification (RFID) are examples of telemetric position monitoring systems. Since the movement control center is required to respond to any actual, attempted, or suspicious activities, the proposed requirements would mitigate the likelihood of theft, diversion, or radiological sabotage of spent nuclear fuel shipments.

F. Why Preplan and Coordinate Spent Nuclear Fuel Shipments?

The current regulations require limited shipment preplanning and coordination with the NRC, States, and local law enforcement agencies (LLEAs). For example, the current

regulations in § 73.37(f) require an advance notification to the Governor (or designee) by mail to be postmarked at least 7 days before transport of a shipment within or through the State; and require a messenger-delivered notification to reach the Office of the Governor (or designee) at least 4 days before transport of a shipment within or through the State. There have been some instances in which States have indicated that the current notification requirements are insufficient to adequately plan for a spent nuclear fuel shipment. In addition, the current 10 CFR 73.37(b)(7) regulation requires licensees to obtain advance NRC approval of the routes used for road and rail shipments of spent nuclear fuel, but does not require prior State coordination of the route. The proposed amendments would ensure that the affected States have early and substantial involvement in the management of spent nuclear fuel shipments by participating in the initial stages of the planning, coordination, and implementation of the shipment.

The proposed § 73.37(b)(1)(iv) would require licensees to preplan and coordinate spent nuclear fuel shipment information with the Governors of the States which the shipment will transit across in order to: (a) ensure minimal shipment delays, (b) arrange for State law enforcement escorts, (c) coordinate movement control information, as needed, (d) coordinate safe haven locations, and (e) coordinate the shipping route. The proposed requirements would ensure that no unusual event associated with the shipment goes unnoticed or unreported. These proposed revisions mitigate the risk of theft, diversion, or radiological sabotage of a spent nuclear fuel shipment. These proposed revisions would address, in part, PRM-73-10 items 3 and 6.

G. Why Require Constant Visual Surveillance by Armed Escort?

Existing requirement 73.37(b)(9) requires constant visual surveillance by an escort when

a shipment is stopped. The existing requirement does not specify whether the escort should be armed. The proposed § 73.37(b)(3)(vii)(C) would ensure that when a shipment is stationary, at least one armed escort maintains constant visual surveillance. Constant surveillance by an armed escort while a shipment is stopped provides assurance that attempts by an adversary to either perform radiological sabotage in place, or to gain control of the transport to move it to another location are impeded or stopped. The requirements of proposed § 73.37(b)(3)(vii)(C) would address parked or stopped road shipments, rail shipment stops in marshaling areas, and docked sea shipments. It would also require periodic reports of shipment status to the movement control center by the armed escort. The proposed § 73.37(b)(3)(vii)(C) would provide reasonable assurance that spent nuclear fuel shipments are protected from theft, diversion, or radiological sabotage when stopped.

H. Why Require Two-way Redundant Communication Capabilities?

The regulations in current 10 CFR 73.37(c), 10 CFR 73.37(d), and 10 CFR 73.37(e) provide for redundant communication; however, the requirements are specific, i.e., use of citizens band radio and radiotelephone. In view of the continued advancements in technology, these methods of communication could become obsolete in the near future. Instead of specifying an acceptable communications technology, the proposed revisions describe the performance characteristics of the communications capabilities.

The proposed §§ 73.37(c)(3), (d)(3) and (e)(3) would require the establishment of two-way communication capabilities for the transport and escorts to contact the movement control center and LLEAs at all times. The revisions would also require the establishment of alternate capabilities for the transport and escorts to contact the movement control center. The alternate communications cannot be subject to the same interference factors. The same interference

factors are defined as any two systems that rely on the same hardware or software to transmit their signal (e.g., cell tower, proprietary network). These requirements would provide the capability for continued communication between movement control personnel, which would ensure the prompt reporting of any incident that could lead to theft, diversion, or radiological sabotage.

I. Why Require Background Investigations?

1. *What is the Objective of the Background investigations requirements for those with unescorted access to spent nuclear fuel in transit?*

The proposed rule would add a new § 73.38 that would require that licensees conduct background investigations of those individuals being considered for unescorted access authorization. The main objective of the background investigations is to ensure that those individuals who have unescorted access to spent nuclear fuel in transit, including but not limited to armed escorts and drivers, are trustworthy and reliable and do not constitute an unreasonable risk to the public health and safety or common defense and security. These background investigations are similar to those already in place for unescorted access to a commercial power reactor.

2. *What is the basis for the fingerprinting requirements in the proposed rule?*

Section 149 of AEA requires that any person who is permitted unescorted access to radioactive materials subject to regulation by the Commission be fingerprinted for FBI identification and criminal history records check. However, Section 149 also requires that the Commission make a determination that such radioactive material is of such significance to the public health and safety or the common defense and security as to warrant fingerprinting and background checks before the Commission can exercise the authority provided by Section 149.

Pursuant to Section 149, the Commission has determined that the transportation of irradiated fuel (spent nuclear fuel) is of such significance to the public health and safety or the common defense and security as to warrant fingerprinting and background checks for those individuals who have such access to the materials in transit. Persons who have "unescorted access" to this material for purposes of Section 149, are persons accompanying the shipment of spent nuclear fuel during transit who have direct access and maintain control over the spent nuclear fuel. These persons may include, but are not limited to, the driver and armed escorts.

Therefore, in accordance with the authority granted by Section 149, this rulemaking would impose a requirement for fingerprinting as a prerequisite to granting unescorted access to spent nuclear fuel in transit. The criminal history records check obtained as a result of that fingerprinting would be used by licensees as part of the overall background investigation to determine the trustworthiness and reliability of these individuals prior to permitting unescorted access.

3. *What are the Components of a Background Investigation?*

The proposed § 73.38(a) lists the requirements for a background investigation, including: fingerprinting for an FBI identification and criminal history records check; verification of true identity; employment history evaluation; verification of education and military history; credit history evaluation; local criminal history review; and character and reputation determination.

Under the proposed § 73.38(b), it is the licensee's responsibility to make a trustworthiness and reliability determination of an individual who has unescorted access to a spent nuclear fuel shipment. It is expected that licensees will use their best efforts to obtain the information required to conduct a background investigation to determine the individuals' trustworthiness and reliability.

The full credit history evaluation requirement, in proposed § 73.38(a)(6), reflects the Commission's intent that all financial information available through credit reporting agencies is to be obtained and evaluated because it has the potential to provide highly pertinent information. The Commission recognizes that some countries may not have routinely accepted credit reporting mechanisms, and therefore, the Commission allows multiple sources of credit history that could potentially provide information about a foreign national's financial record and responsibility.

Fingerprinting an individual for a FBI criminal history records check, as would be required by the proposed § 73.38(a)(1), is an important element of the background investigation for determining the trustworthiness and reliability of an individual. It can provide comprehensive information regarding an individual's recorded criminal activities within the U.S. and its territories and the individual's known affiliations with violent gangs or terrorist organizations. In addition, the local criminal history review, which would be required by the proposed § 73.38(a)(7), provides the licensee with a record of local criminal activity that may adversely impact an individual's trustworthiness and reliability.

It is noted that the proposed § 73.38(a)(10) would require licensees to document any refusals by outside entities to provide information on an individual. If local law enforcement, a previous employer or an educational institution or any other entity with which the individual claims to have been engaged, fails to provide information or indicates an inability or unwillingness to provide information in a timely manner, the licensee would be required to document the refusal, unwillingness, or inability to respond in the record of investigation. The licensee would then need to obtain confirmation from at least one alternate source that has not been previously used. An alternate source could be another person associated with the entity or institution. For example, if the human resources department of a company will not verify the

employment history of the individual, an alternate source could be the individual's supervisor during the claimed period. The proposed § 73.38(a)(10) is patterned after the requirements of 10 CFR 73.56(d)(4)(iv)(B).

4. *What Information Should the Licensee Use to Determine that an Individual is Trustworthy and Reliable?*

The licensee would use all of the information gathered during the background investigation, including the information received from the FBI, in making a determination that an individual is trustworthy and reliable. The licensee may not determine that an individual is trustworthy and reliable and grant them unescorted access to spent nuclear fuel in transit until all of the information for the background investigation has been obtained and evaluated. The licensee may deny an individual unescorted access based on any information obtained at any time during the background investigation. The proposed § 73.38(b) includes a provision for licensees to document their determinations of trustworthiness and reliability.

5. *How Frequently Would a Reinvestigation Be Required?*

The proposed rule would include a provision, § 73.38(e), that would require a reinvestigation every 10 years to help maintain the integrity of the program. This reinvestigation requirement is necessary because an individual's financial situation or criminal history may change over time in a manner that can adversely affect his or her trustworthiness and reliability. The reinvestigation would include fingerprinting, FBI identification and criminal history records check, local criminal history review and credit history check. The reinvestigation would not include employment verification, education verification, military history verification, or the character and reputation determination for the reinvestigation.

6. *Are Licensees Required to Protect Information Obtained During a Background Investigation?*

Yes. The proposed §§ 73.38(c)(1)-(2) would require licensees to protect the information obtained during a background investigation. Licensees would only be permitted to disclose the information to the subject individual, the individual's representative, those who have a need-to-know to perform their assigned duties to grant or deny unescorted access, or an authorized representative of the NRC. This proposed revision is consistent with the requirements of 10 CFR 73.57(f).

7. *Could a Licensee Transfer Personal Information Obtained During an Investigation to Another Licensee?*

Yes. The proposed § 73.38(c)(3) includes a provision that a licensee would be able to transfer background information on an individual to another licensee if the individual makes a written request to the licensee to transfer the information contained in his or her file.

8. *What Records Are Required to be Maintained?*

The proposed § 73.38(c)(5) would require licensees to retain all fingerprint and criminal history records received from the FBI, or a copy if the individual's file has been transferred, for 5 years after the individual no longer requires unescorted access to spent nuclear fuel in transit.

J. Why Enhance Shipment Notifications to the NRC?

The current regulations in 10 CFR 73.72(a)(4) requires an NRC notification, by phone, at least 2 days before the shipment commences. The proposed rule would revise § 73.72(a)(4) to require 2 additional notifications of the NRC, one to be made 2 hours before the shipment commences, and the other to be made when the shipment reaches its final destination. These additional notifications allow the NRC to monitor spent nuclear fuel shipments, and to maximize its readiness in case of a safeguards event. The notification of shipment completion allows the NRC to resume normal operations.

To further enhance notification of the NRC, the proposed revision would remove the 10 CFR 73.72(b) exemption for shipments of spent nuclear fuel that are transported on public roads. Currently, the requirements of 10 CFR 73.72(b) exempt licensees who make a road shipment or transfer with one-way transit times of one hour or less between installations of the licensee from providing advance notification of the shipment to the NRC. The proposed revision would require that NRC be informed of any spent nuclear fuel shipment on a public road so that NRC is able to monitor spent nuclear fuel shipments and to maximize its readiness in case of a safeguards event. These proposed revisions mitigate the risk of theft, diversion, or radiological sabotage of a shipment.

K. Who Would This Action Affect?

The proposed amendments affect all NRC licensees that are authorized to possess and transport spent nuclear fuel. This includes, but is not limited to, licensees of commercial power reactors, research and test reactors, and independent spent fuel storage installations, who transport, or deliver to a carrier for transport, in a single shipment, a quantity of irradiated reactor fuel in excess of 100 grams (0.22 lbs) in net weight of irradiated fuel, exclusive of cladding or other structural or packaging material, which has a total external radiation dose rate in excess of 1 Sv (100 rems) per hour at a distance of .91 meters (3 feet) from any accessible surface without intervening shielding.

L. Does the NRC Plan To Issue Guidance on These The Proposed Requirements?

In conjunction with this the proposed rulemaking, the NRC is revising NUREG-0561, "Requirements for Physical Protection of Irradiated Reactor Fuel in Transit," which was published in June 1980, to address the new requirements in the proposed rule. NUREG-0561

provides general guidance to licensees concerning the establishment of an acceptable security program for spent nuclear fuel shipments.

M. What Should I Consider as I Prepare My Comments to NRC?

Tips for preparing your comments: When submitting your comments, remember to:

i. Identify the rulemaking (Docket ID: NRC-2009-0163).

ii. Explain why you agree or disagree; suggest alternatives and substitute language for your requested changes.

iii. Describe any assumptions and provide any technical information and/or data that you used.

iv. If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.

v. Provide specific examples to illustrate your concerns, and suggest alternatives.

vi. Explain your views as clearly as possible.

vii. Make sure to submit your comments by the comment period deadline.

viii. See Section VI of the preamble for the request for comments on the use of plain language and Section XI for the request for comments on the draft regulatory analysis.

III. Discussion of the Proposed Amendments by Section

A. The Proposed §73.37(a)(1)

The proposed rule would revise § 73.37(a)(1) to include the International System of Measurement (SI) accompanied by the equivalent English units in parentheses for the weight and dose rate measurements. This is in accordance with the NRC's metrication policy (57 FR 46202, October 7, 1992), and the Metric Conversion Act of 1975, 15 U.S.C. §§ 205a

et seq. The proposed rule would also add a footnote to clarify that the term "irradiated reactor fuel," as used in 10 CFR 73.37, means "spent nuclear fuel."

B. The Proposed § 73.37(a)(1)(i)

The language in the current regulation solely addresses potential radiological sabotage of spent nuclear fuel shipments. The proposed rule would revise § 73.37(a)(1)(i) to clarify that any attempted theft or diversion of spent nuclear fuel shipments is also covered by this regulation.

The proposed rule would also revise §§ 73.37(a)(1)(i) and (a)(2)(iii) to remove the distinction between heavily populated areas and other areas through or across which a spent nuclear fuel shipment may pass. The differentiation of security requirements based upon population densities creates potential vulnerabilities in the physical security of the shipment. The proposed requirement of armed escorts throughout the shipment route minimizes the risk of theft, diversion, or radiological sabotage. The proposed revisions would also address items 4 and 5 of the PRM-73-10.

C. The Proposed § 73.37(a)(2)

The proposed rule would revise § 73.37(a)(2) to insert "system" after the word phrase "physical protection" to read as "physical protection system." This change provides consistency in the terminology used throughout 10 CFR Part 73.

The proposed revision would renumber the paragraphs in § 73.37(a)(2). The current § 73.37(a)(2)(ii) would become the proposed § 73.37(a)(2)(iii), and the current § 73.37(a)(2)(iii) would become the proposed § 73.37(a)(2)(ii). The proposed rule would revise the current § 73.37(a)(2)(iii) to clarify that the licensee should delay, as well as impede, any attempted

theft, diversion, or radiological sabotage of spent nuclear fuel shipments.

D. The Proposed § 73.37(b)

This overall section is revised to provide a logical, step-by-step approach to the development of a physical protection system for spent nuclear fuel shipments that is more user-friendly.

E. The Proposed § 73.37(b)(1)

The proposed rule would add a new section entitled, "*Preplan and Coordinate Spent Nuclear Fuel Shipments,"* which is explained in further detail below. The proposed rule would move and incorporate the current § 73.37(b)(1) into a new § 73.37(b)(2).

The proposed rule would add a new § 73.37(b)(1)(i) which requires that licensees instruct armed escorts on the use of deadly force. The existing provisions of 10 CFR 73.37 provide performance objectives to be achieved by the physical protection system for spent nuclear fuel shipments. These performance objectives are not specific about the degree of force an armed escort may use in protecting shipments.

Specifically, the licensee is to ensure that each non-LLEA armed escort delay or impede attempted acts of theft, diversion, or radiological sabotage by using force sufficient to counter the force directed at that person, including the use of deadly force when there is a reasonable belief that the use of deadly force is necessary in self-defense or in the defense of others, or any other circumstances as authorized by applicable Federal or State law. The requirements for use of deadly force are established under applicable Federal and State laws (i.e., the States through which the shipment is passing through). It should be noted that the proposed revision is not authorizing the use of deadly force, but instead is ensuring that the armed guards are

knowledgeable of the Federal and State statutes that apply regarding the use of deadly force. The statutes regarding the use of deadly force may vary depending on what jurisdiction the shipment is located. Armed escorts are expected to carry out their assigned duties, including implementation of contingency procedures in case of attack, in a manner consistent with the legal requirements applicable to other private armed guards in a particular jurisdiction. The LLEA personnel escorts are exempt from this requirement since they are subject to, and should have received training on, State and Federal restrictions regarding the use of deadly force.

The proposed rule would add new §§ 73.37(b)(1)(ii) and 73.37(b)(1)(iii), which are accounting and control measures that ensure only authorized individuals receive the shipment. The proposed requirements would reduce the risk of theft, diversion, or radiological sabotage of the spent nuclear fuel.

The proposed rule would re-designate 10 CFR 73.37(b)(8) as § 73.37(b)(1)(iv) and revise it to include requirements for licensees to preplan and coordinate spent nuclear fuel shipments with States. The preplanning and coordination would include efforts to minimize intermediate stops and delays, arranging for State law enforcement escorts, the sharing of positional information and the development of route information, including the location of safe havens. The proposed amendments would ensure that States have early and substantial involvement in the management of spent nuclear fuel shipments by participating in the initial stages of the planning, coordination, and implementation of the shipment.

The proposed rule would re-designate § 73.37(b)(6) as § 73.37(b)(1)(v) and revise it to make minor editorial changes.

The proposed rule would re-designate § 73.37(b)(7) as § 73.37(b)(1)(vi) and revise it to expand the requirements for preplanning and coordination with NRC. The proposed § 73.37(b)(1)(vi) would require licensees to identify the locations of safe havens along road

shipment routes, obtain NRC route approval prior to the 10 day advance notice required by 10 CFR 73.72(a)(2), and provide specific information to the NRC, such as identification of the shipper, consignee, carriers, transfer points, modes of shipment, and a description of shipment security arrangements.

The proposed rule would add a new § 73.37(b)(1)(vii), which requires the documentation of preplanning and coordination activities.

F. The Proposed § 73.37(b)(2)

The proposed rule would re-designate § 73.37(f), the advance notifications provision, as § 73.37(b)(2) and would revise it to include: (1) a reference to § 73.22 SGI protection requirements, (2) a reference to the NRC website listing contact information for State governors and governors' designees, (3) a requirement to include within the notification the license number of the shipper and receiver, and (4) a requirement to provide the estimated date and time of arrival of the shipment at the destination. The proposed § 73.37(b)(2) would also include new recordkeeping and shipment cancellation notification requirements.

G. The Proposed § 73.37(b)(3)

The proposed rule would add a new § 73.37(b)(3) entitled, "*Transportation Physical Protection Program.*" The proposed § 73.37(b)(3) would both streamline and combine existing requirements in §§ 73.37(b)(3)-(5) and 73.37(b)(9)-(11).

The proposed § 73.37(b)(3)(i) would introduce the term "movement control center," which replaces the term "communication center" used in the current regulation. The term "movement control center" is used for consistency with physical protection terminology and to better define the role and responsibilities of the facility. The movement control center is defined

as an operations center which is remote from transport activity and which maintains periodic position information on the movement of the shipment, receives reports of attempted theft, diversion, or radiological sabotage, provides a means for reporting these and other problems to appropriate agencies, and can request and coordinate appropriate aid.

The proposed rule would re-designate § 73.37(b)(4) as § 73.37(b)(3)(ii) and revise it to reflect that the movement control center personnel will have the authority to direct physical protection activities. The proposed rule would also add a new § 73.37(b)(3)(iii), which will clarify the duties of the movement control center personnel.

The proposed rule would re-designate § 73.37(b)(5) as § 73.37(b)(3)(iv) and revise it to make minor editorial changes.

The proposed rule would add a new § 73.37(b)(3)(v), which requires licensees to develop, maintain and implement written physical protection procedures to address access controls, duties of the movement control center personnel, drivers, armed escorts and other individuals responsible for the security of the shipment, reporting of safeguards events, communications protocols, and normal conditions operating procedures.

The proposed rule would add a new § 73.37(b)(3)(vi), which incorporates the recordkeeping requirements of the current §§ 73.37(b)(2) and (3).

The proposed rule would re-designate § 73.37(b)(10) as § 73.37(b)(3)(vii)(A) and revise it to include additional training requirements described in sections III and IV of Part 73, Appendix B. This revision is a clarification of the existing requirements in 10 CFR 73.37. The current 10 CFR 73.37(b)(10) refers to training requirements in 10 CFR 73, Appendix D. Appendix D, in turn, refers to requirements in 10 CFR 73, Appendix B, III and IV. For clarity, the proposed revision would add a direct reference to Appendix B.

The proposed rule would re-designate § 73.37(b)(11) as § 73.37(b)(3)(vii)(B) and revise

it by changing the escort's requirement to contact movement control center from "at least every 2 hours" to contacts at "random intervals, not to exceed 2 hours." The proposed provision would also change "communications center" to "movement control center."

The proposed rule would re-designate the current § 73.37(b)(9) as § 73.37(b)(3)(vii)(C) and would revise it by further clarifying the escort's responsibilities when the shipment vehicle is stopped, or the shipment vessel is docked. The proposed revisions would ensure that when a shipment is stationary at least one armed escort maintains constant visual surveillance. The proposed rule also would provide for periodic reports of shipment status to the movement control center by the armed escort.

H. The Proposed § 73.37(b)(4)

The proposed rule would re-designate § 73.37(b)(2) as § 73.37(b)(4)(i)-(iii), "*Contingency and Response Procedures,*" and would add additional requirements. The proposed rule would add new §§ 73.37(b)(4)(i) and 73.37(b)(4)(ii), which would require licensees to develop and implement contingency and response procedures, and would require licensees to train personnel in these procedures. The current requirements in 10 CFR 73.37(b) do not specifically require personnel training, but only require escorts to receive instructions. The proposed rule would expressly require that written procedures are developed and that all personnel associated with the transport and security of the shipment are adequately trained to carry out their responsibilities. The proposed revisions provide reasonable assurance of a more timely and effective response to any attempted theft, diversion, or radiological sabotage. A response to an event must be initiated without delay in order to have a high probability of success. The response is more likely to be timely and effective if roles, responsibilities, and actions are clearly delineated and understood in advance.

The proposed rule would also add a new § 73.37(b)(4)(iii), which would incorporate the current § 73.37(b)(2) recordkeeping requirements.

The proposed rule would re-designate § 73.37(b)(3) as § 73.37(b)(4)(iv) and revise it to include the requirement that the contingency and response procedures direct the escort to take the necessary steps to delay or impede theft, diversion, or radiological sabotage of spent nuclear fuel in transit.

I. The Proposed § 73.37(c)

The proposed rule would revise § 73.37(c)(1) and delete § 73.37(c)(2) to eliminate the distinction between heavily populated areas and other areas through which a road shipment of spent nuclear fuel shipment may pass. The proposed § 73.37(c)(1) would require armed escorts for the entire shipment route. In addition, a new § 73.37(c)(1)(iii) would require non-LLEA armed escorts to have a minimum of two weapons. The NRC staff has determined that it is prudent to require a minimum of two weapons for each armed escort.

The proposed deletion of the current § 73.37(c)(2) would result in a renumbering of the section. The proposed rule would re-designate current § 73.37(c)(3) as § 73.37(c)(2) and revise it as described below. The requirements in the current § 73.37(c)(3) describe specific acceptable types of communication devices, i.e., use of citizens band radio, radiotelephone, which may become obsolete in the near future. Instead of specifying an acceptable communications technology, the proposed § 73.37(c)(2) revisions describe the performance characteristics of the communications capabilities.

The proposed rule would re-designate § 73.37(c)(4) as § 73.37(c)(3) and § 73.37(c)(5) as § 73.37(c)(4). The proposed rule would add a new § 73.37(c)(5), which would require continuous and active monitoring of the shipment by a telemetric position monitoring system or

an alternative tracking system. The proposed revisions would ensure that shipments are continuously and actively monitored by a tracking system that communicates continuous position information to a movement control center. This requirement would allow the movement control center to receive positive confirmation of the location, status, and control of the shipment. These requirements would ensure immediate detection of any deviations from the authorized route, which will provide a prompt notification of any emergency or safeguards event. The proposed revisions would facilitate a more timely and effective response.

J. The Proposed § 73.37(d)

The proposed rule would revise § 73.37(d)(1) and delete § 73.37(d)(2) to eliminate the distinction between heavily populated areas and other areas through which a rail shipment of spent nuclear fuel may pass. The proposed § 73.37(d)(1) would require armed escorts for the entire shipment route. The proposed rule would add a new § 73.37(d)(2) to require a minimum of 2 weapons for non-LLEA armed escorts. The proposed rule would revise § 73.37(d)(3), which describes acceptable types of communication devices. The NRC recognizes that these devices may become obsolete in the near future. Instead of specifying acceptable communications technology, the proposed § 73.37(d)(3) describes the performance characteristics of the communication capabilities. The proposed rule would also add a new § 73.37(d)(4) which would address continuous and active monitoring of the shipment by a telemetric position monitoring system or an alternative tracking system.

K. The Proposed § 73.37(e)

The proposed rule would revise §§ 73.37(e)(1) and (e)(2) to eliminate the distinction between heavily populated areas and other areas for sea shipments of spent nuclear fuel. The

proposed § 73.37(e)(1)(i) would require armed escorts at any U.S. port where vessels carrying spent nuclear fuel shipments are docked. The proposed § 73.37(e)(1)(i) would also require a minimum of two weapons for each non-LLEA escort. The proposed rule would revise § 73.37(e)(3) to eliminate the listing of communication devices. Instead of specifying acceptable communication technology, the proposed § 73.37(e)(3) would describe the performance characteristics of the communication capabilities.

L. The Proposed § 73.37(f)

The proposed rule would re-designate the current § 73.37(f) as § 73.37(b)(2). A new proposed § 73.37(f) would require an immediate investigation if a shipment is lost or unaccounted for after the designated no-later-than arrival time. This proposed requirement would facilitate the location and recovery of shipments that may have come under control of unauthorized persons.

M. The Proposed § 73.37(g)

The proposed rule would delete the reference to § 73.37(f)(3) and insert the reference to § 73.37(b)(2)(iii) to reflect the reorganization of § 73.37.

N. The proposed § 73.38 background investigation requirements for unescorted access to irradiated reactor fuel in transit

The proposed § 73.38 would establish the elements of a background investigation for granting an individual unescorted access to spent nuclear fuel in transit. The scope of the investigation would cover the past 10 years. The proposed § 73.38(a) would establish the initial investigation requirements for individuals with unescorted access to spent nuclear fuel in transit.

For an individual seeking unescorted access to spent nuclear fuel in transit, the proposed §§ 73.38(a)(1)-(9) would require licensees to conduct fingerprinting and an FBI identification and criminal history records check; verification of true identity; employment history evaluation, verification of education; military history verification; credit history evaluation; criminal history review; character reputation and determination; and obtain independent information, respectively. The proposed § 73.38(a)(10) would allow a licensee to rely upon an alternate source that has not been previously used, if the licensee cannot obtain information on an individual from their previous employer, educational institution, or any other entity with which the individual claims to have been engaged. The proposed § 73.38(a)(10) is patterned after 10 CFR 73.56(d)(4)(iv)(B).

The proposed § 73.38(b) would require licensees to make and document trustworthiness and reliability determinations after obtaining and evaluating the information required by §§ 73.38(a)(1)-(10). Licensees would be required to maintained records of trustworthiness and ratability for 5 years from the date the individual no longer requires unescorted access to spent nuclear fuel shipments.

The proposed § 73.38(c) would require licenses to protect the information obtained from background investigations, while allowing licensees to transfer background information on an individual to another licensee if the individual makes a written request for such transfer. The proposed § 73.38(c) would allow a licensee to rely on the background information transferred from another licensee, provided that the receiving licensee verifies the name, date of birth, social security number, sex, and other applicable physical characteristics to ensure that the individual is the person whose file has been transferred.

A number of individuals who would be subject to the background investigation portion of this proposed rule may have recently satisfied similar requirements under prior NRC orders.

For such individuals, it would be an unnecessary use of resources to re-fingerprint them. Thus, the proposed § 73.38(d) would permit persons to essentially re-use the results of a fingerprint check that has been created within 5 years of the effective date of the rule. This would not be "relieving" such individuals from the rule, but rather permitting them to satisfy the fingerprinting requirements by other means. It is important to emphasize, however, that a licensee's ability to use previous fingerprinting results is not a substitute for the licensee independently concluding that the person is suitable for unescorted access to spent nuclear fuel in transit, including subjecting the person to all other applicable requirements of the background investigation that would be required by § 73.38(a).

The proposed § 73.38(e) would establish the requirements for reinvestigation of individuals with unescorted access to spent nuclear fuel in transit. The proposed § 73.38(e) would establish completion of reinvestigations within 10 years of the last investigation. The scope of the investigation would be the past 10 years and would consist of fingerprinting and a FBI identification and criminal history records check; criminal history review; and credit history re-evaluation.

O. The Proposed § 73.72(a)(4)

The proposed rule would revise § 73.72(a)(4) to require 2 additional notifications of the NRC, 1 to be made 2 hours before the commencement of the shipment and the other to be made when the shipment arrives at its final destination. The current requirements of 10 CFR 73.72 require notification 2 days before the shipment commences, but not 2 hours before the shipment begins or when it ends.

P. The Proposed § 73.72(a)(5)

The proposed rule would revise § 73.72(a)(5) to clarify the meaning of the language "greater than ± 6 hours" that appears in the section. The proposed revision deletes "greater" and inserts "more," and deletes the symbol "±."

Q. The Proposed § 73.72(b)

The current requirements in § 73.72(b) exempt licensees who make a road shipment or transfer with one-way transit times of one hour or less between installations of the licensee from providing advance notification of the shipment to the NRC. The proposed amendment would remove this exemption from the regulations. This proposed revision would ensure that the NRC is informed of any spent nuclear fuel shipment on a public road, even those of short duration, and the NRC is prepared to respond to an emergency or safeguards event. It would mitigate the risk of theft, diversion, or radiological sabotage of a shipment.

Table 1 - Cross Reference of Proposed Regulations with Existing Regulations

THE PROPOSED REGULATION	EXISTING REGULATION
73.37 (a)(1)	73.37 (a)(1)
73.37 (a)(2)	73.37 (a)(2)
73.37 (b)(1)(i)-(iii)	New (no existing equivalent)
73.37 (b)(1)(iv)(A)	73.37(b)(8)
73.37 (b)(1)(iv)(B)	New (no existing equivalent)
73.37 (b)(1)(iv)(C)	New (no existing equivalent)
73.37 (b)(1)(iv)(D)	New (no existing equivalent)
73.37 (b)(1)(v)	73.37(b)(6)
73.37 (b)(1)(vi)	73.37(b)(7)
73.37 (b)(1)(vi)(A)	New (no existing equivalent)
73.37 (b)(1)(vi)(B)	73.37(b)(7)
73.37 (b)(1)(vi)(C)	73.37(b)(7)
73.37 (b)(1)(vii)	New (no existing equivalent)
73.37 (b)(2)	73.37 (b)(1) & 73.37(f)
73.37 (b)(2)(i)	73.37 (f)(1)
73.37 (b)(2)(ii)	73.37(f)(2)
73.37 (b)(2)(iii)	73.37(f)(3)
73.37 (b)(2)(iv)	73.37(f)(4)
73.37 (b)(2)(v)	73.37(f)(4)

THE PROPOSED REGULATION	EXISTING REGULATION
73.37 (b)(2)(vi)	73.70
73.37 (b)(3)(i)	New (no existing equivalent)
73.37 (b)(3)(ii)	73.37(b)(4)
73.37 (b)(3)(iii)	73.37(b)(4)
73.37 (b)(3)(iv)	73.37(b)(5)
73.37 (b)(3)(v)	New (no existing equivalent)
73.37 (b)(3)(vi)	73.37(b)(3)
73.37 (b)(3)(vii)(A)	73.37(b)(10)
73.37 (b)(3)(vii)(B)	73.37(b)(11)
73.37 (b)(3)(vii)(C)	73.37(b)(9)
73.37 (b)(4)(i)	73.37(b)(2)
73.37 (b)(4)(ii)	73.37(b)(2)
73.37(b)(4)(iii)	73.37(b)(2)
73.37(b)(4)(iv)	73.37(b)(3)
73.37(c)	73.37(c)
73.37(c)(1)	73.37(c)(1)
-------(none-paragraph deleted)---	73.37 (c)(2)
73.37(c)(2)	New (no existing equivalent)
73.37(c)(3)	73.37(c)(3)
73.37(c)(4)	73.37(c)(4)
73.37(c)(5)	73.37(c)(5)
73.37(c)(6)	New (no existing equivalent)
73.37(d)	73.37(d)
73.37(d)(1)	73.37(d)(1)
-------(none-paragraph deleted)---	73.37(d)(2)
73.37(d)	73.37(d)
73.37(d)(2)	New (no existing equivalent)
73.37(d)(3)	73.37(d)(3)
73.37(d)(4)	New (no existing equivalent)
73.37(e)	73.37(4)
73.37(e)(1)	73.37(e)(1)
73.37(e)(2)	New (no existing equivalent)
73.37(e)(3)	73.37(e)(2)
73.37(e)(4)	73,37 (e)(3)
73.37(f)	New – incorporates 73.71 reporting provisions
73.37(g)	73.38 (g)
73.38	New-incorporates background investigations
73.72(a)(1)	73.72(a)(1)
73.72(a)(4)(i)-(iii)	73.72(a)(4)
73.72(a)(5)	73.72(a)(5)
-------(none-exemption deleted from existing)	73.72(b)
73.72(b)	New (no existing equivalent-new exemption)

IV. Criminal Penalties

For the purpose of Section 223 of the AEA, the Commission is proposing to amend 10 CFR Part 73 under one or more of Sections 161b, 161i, or 161o of the AEA. Willful violations of the rule would be subject to criminal enforcement.

V. Agreement State Compatibility

Under the "Policy Statement on Adequacy and Compatibility of Agreement State Programs" approved by the Commission on June 30, 1997, and published in the *Federal Register* on September 3, 1997 (62 FR 46517), this rule is classified as a Compatibility Category "NRC." The NRC staff analyzed the proposed rule in accordance with the procedure established within Part III, "Categorization Process for NRC Program Elements," of Handbook 5.9 to Management Directive 5.9, "Adequacy and Compatibility of Agreement State Programs" (a copy of which may be viewed at http://www.nrc.gov/reading-rm/doc-collections/management-directives/).

The NRC program elements in this category are those that relate directly to areas of regulation reserved to the NRC by the AEA, or the provisions of 10 CFR. Although an Agreement State may not adopt program elements reserved to NRC, it may wish to inform its licensees of certain requirements via a mechanism that is consistent with the particular State's administrative procedure laws but does not confer regulatory authority on the State. The regulation of spent nuclear fuel is reserved to the NRC and cannot be relinquished to an Agreement State. Thus, this rulemaking will have no impact on Agreement States' regulatory

programs. Therefore, Agreement States will not need to make conforming changes to their regulations.

VI. Plain Language

The Presidential Memorandum "Plain Language in Government Writing," published June 10, 1998 (63 FR 31885), directed that the Government's documents be written in clear and accessible language. The NRC requests comments on this proposed rule specifically with respect to the clarity and effectiveness of the language used. Comments should be sent to the address listed under the "ADDRESSES" heading of this document.

VII. Voluntary Consensus Standards

The National Technology Transfer and Advancement Act of 1995 (Pub. L. 104-113) requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies unless the use of such a standard is inconsistent with applicable law or otherwise impractical. The NRC is proposing to amend 10 CFR 73.37, which contains the requirements for the physical protection of spent nuclear fuel in transit, add a new 10 CFR 73.38, which establishes the requirements for a background investigation of individuals applying for unescorted access to spent nuclear fuel shipments, and 10 CFR 73.72, which contains the requirements for the advance notification of the NRC of spent nuclear fuel along with other special nuclear material. This action does not constitute the establishment of a standard that establishes generally applicable requirements.

VIII. Finding of No Significant Environmental Impact: Availability

Under the National Environmental Policy Act of 1969, as amended, and the NRC regulations in Subpart A of 10 CFR Part 51, the NRC has determined that this proposed rule, if adopted, would not be a major Federal action significantly affecting the quality of the human environment and, therefore, an environmental impact statement is not required for this rulemaking. The NRC has prepared an environmental assessment and, on the basis of this environmental assessment, has made a finding of no significant impact.

The implementation of the proposed rule's security requirements would not result in significant changes to the licensees' facilities, nor would such implementation result in any significant increase in effluents released to the environment. Similarly, the implementation of the proposed rule's security requirements would not affect occupational exposure requirements. No major construction or other earth disturbing activities, on the part of affected licensees, is anticipated in connection with licensees' implementation of the proposed rule's requirements. The Commission has determined that the implementation of this proposed rule would be procedural and administrative in nature.

The determination of this environmental assessment is that there will be no significant impact to the public from this action. However, the general public should note that the NRC welcomes public participation. Comments on any aspect of the environmental assessment may be submitted to the NRC as indicated under the ADDRESSES heading in this document.

The NRC has sent a copy of the environmental assessment and this proposed rule to every State Liaison Officer and requested their comments on the environmental assessment. The environmental assessment may be examined at the NRC Public Document Room, O-1F23, 11555 Rockville Pike, Rockville, MD 20852.

XI. Paperwork Reduction Act Statement

This proposed rule contains new or amended information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq). This rule has been submitted to the Office of Management and Budget for review and approval of the information collection requirements.

Type of submission, new or revision: Revision

The title of the information collection: 10 CFR 73, "Physical Protection of Plants and Materials," The Proposed Rule.

The form number if applicable: NA

How often the collection is required: On occasion

Who will be required or asked to report: NRC licensees that are authorized to possess and transport spent nuclear fuel in excess of 100 grams (0.22 lbs) in net weight exclusive of cladding or other material, which has a total radiation level in excess of 1 Sv (100 rems) per hour at a distance of .91 meters (3 feet) from any accessible surface without regard to any intervening shielding.

An estimate of the number of annual responses: 396

The estimated number of annual respondents: 18

An estimate of the total number of hours needed annually to complete the requirement or request: 1099 (61 hrs per respondent)

Abstract: The NRC is proposing to amend its regulations to enhance the requirements for the safety and security of spent nuclear fuel during transit and to make these applicable to all licensees by placing them in the 10 CFR. The proposed rulemaking would

establish the minimum performance standards and objectives for the protection of spent nuclear fuel shipments from theft, diversion or radiological sabotage. The proposed amendments would affect licensees authorized to possess or transport spent nuclear fuel.

The NRC is seeking public comment on the potential impact of the information collections contained in this proposed rule and on the following issues:

1. Is the proposed information collection necessary for the proper performance of the functions of the NRC, including whether the information will have practical utility?

2. Is the estimate of burden accurate?

3. Is there a way to enhance the quality, utility, and clarity of the information to be collected?

4. How can the burden of the information collection be minimized, including the use of automated collection techniques?

A copy of the OMB clearance package may be viewed free of charge at the NRC Public Document Room, One White Flint North, 11555 Rockville Pike, Room O-1 F21, Rockville, MD 20852. The OMB clearance package and the proposed rule are available for 60 days after the signature date of this notice at the NRC worldwide Web site: *http://www.nrc.gov/public-involve/doc-comment/omb/index.html*.

Send comments on any aspect of these proposed regulations related to information collections, including suggestions for reducing the burden and on the above issues, by (**INSERT DATE 30 DAYS AFTER PUBLICATION**) to the Records and FOIA/Privacy Services Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet electronic mail to Infocollects.Resource@NRC.gov and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (RIN-3150-AI64), Office of Management and Budget, Washington, DC 20503. Comments on the proposed information collections may also

be submitted via the Federal eRulemaking Portal http://www.regulations.gov, Document ID: NRC-2009-0163. Comments received after this date will be considered if it is practical to do so, but assurance of consideration cannot be given to comments received after this date.

X. Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.

XI. Regulatory Analysis

The Commission has prepared a draft regulatory analysis on this proposed regulation. The analysis examines the costs and benefits of the alternatives considered by the Commission.

The Commission requests public comment on the draft regulatory analysis. Comments on the draft analysis may be submitted to the NRC as indicated under the ADDRESSES heading. The analysis is available for inspection in the NRC Public Document Room, 11555 Rockville Pike, Rockville, MD 20852.

XII. Regulatory Flexibility Certification

In accordance with the Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b)), the Commission certifies that this rule would not, if promulgated, have a significant economic impact on a substantial number of small entities. The companies that possess or transport

spent nuclear fuel do not fall within the scope of the definition of "small entities" set forth in the Regulatory Flexibility Act or the size standards established by the NRC (10 CFR 2.810).

XIII. Backfit Analysis

The NRC has determined that the backfit rule (§§ 50.109, 70.76, 72.62, or 76.76) does not apply to this proposed rule because this amendment would not involve any provisions that would impose backfits as defined in 10 CFR Chapter I. Therefore, a backfit analysis is not required.

List of Subjects in 10 CFR Part 73

Criminal penalties, Export, Hazardous materials transportation, Import, Nuclear materials, Nuclear power plants and reactors, Reporting and recordkeeping requirements, Security measures.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; and 5 U.S.C. 552 and 553; the NRC proposes to adopt the following amendments to 10 CFR Part 73.

PART 73—PHYSICAL PROTECTION OF PLANTS AND MATERIALS

1. The authority citation for Part 73 continues to read as follows:

Authority: Secs. 53, 161, 149, 68 Stat. 930, 948, as amended, sec. 147, 94 Stat. 780 (42 U.S.C. 2073, 2167, 2169, 2201); sec. 201, as amended, 204, 88 Stat. 1242, as

amended, 1245, sec. 1701, 106 Stat. 2951, 2952, 2953 (42 U.S.C. 5841, 5844, 2297f); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note); Energy Policy Act of 2005, Pub. L. 109–58, 119 Stat. 594 (2005).

Section 73.1 also issued under secs. 135, 141, Pub. L. 97-425, 96 Stat. 2232, 2241 (42 U.S.C. 10155, 10161).

Section 73.37(f) also issued under sec. 301, Pub. L. 96–295, 94 Stat. 789 (42 U.S.C. 5841 note).

Section 73.57 is issued under sec. 606, Pub. L. 99-399, 100 Stat. 876 (42 U.S.C. 2169).

2. Revise § 73.37 is revised to read as follows:

§73.37 Requirements for physical protection of irradiated reactor fuel in transit.

(a) Performance objectives.

(1) Each licensee who transports, or delivers to a carrier for transport, in a single shipment, a quantity of irradiated reactor fuel[1] in excess of 100 grams (0.22 lbs) in net weight of irradiated fuel, exclusive of cladding or other structural or packaging material, which has a total external radiation dose rate in excess of 1 Sv (100 rems) per hour at a distance of .91 meters (3 feet) from any accessible surface without intervening shielding, shall establish and maintain, or make arrangements for, and assure the proper implementation of, a physical protection system for shipments of such material that will achieve the following objectives:

(i) Minimize the potential for theft, diversion, or radiological sabotage of spent nuclear fuel shipments; and

* * * * *

(2) To achieve these objectives, the physical protection system shall:

* * * * *

(ii) Delay and impede attempts at theft, diversion, or radiological sabotage of spent nuclear fuel shipments until response forces arrive; and

(iii) Provide for notification to the appropriate response forces of any attempts at theft, diversion, or radiological sabotage of spent nuclear fuel shipment.

(b) General requirements. To achieve the performance objectives of paragraph (a) of this section, a physical protection system established and maintained, or arranged for, by the licensee shall include the following elements:

(1) Preplan and Coordinate Spent Nuclear Fuel Shipments. Each licensee shall:

(i) Ensure that each armed escort is instructed on the use of force sufficient to counter the force directed at the person, including the use of deadly force when the armed escort has a reasonable belief that the use of deadly force is necessary in self-defense or in the defense of others, or any other circumstances, as authorized by applicable Federal and State laws. This requirement does not apply to members of local law enforcement agencies performing escort duties.

(ii) Preplan and coordinate shipment itineraries to ensure that the receiver at the final delivery point is present to accept the shipment.

(iii) Ensure written certification of any transfer of custody.

(iv) Preplan and coordinate shipment information with the governor of a State, or the governor's designee, of a shipment of spent nuclear material through or across the boundary of the State, in order to:

(A) Minimize intermediate stops and delays;

(B) Arrange for State law enforcement escorts;

[1] For purposes of 10 CFR 73.37, the terms “irradiated reactor fuel” and “spent nuclear fuel” are used interchangeably.

C) Arrange for positional information sharing when requested; and

(D) Develop route information, including the identification of safe havens.

(v) Arrange with local law enforcement authorities along the shipment route, including U.S. ports where vessels carrying spent nuclear fuel shipments are docked, for their response to an emergency or a call for assistance.

(vi) Preplan and coordinate with the NRC to obtain advance approval of the routes used for road and rail shipments of spent nuclear fuel, and of any U.S. ports where vessels carrying spent nuclear fuel shipments are scheduled to stop.

(A) For road shipments, the route should include locations of safe havens that have been coordinated with the appropriate State(s).

(B) The NRC approval shall be obtained prior to the 10 day advance notification requirement in § 73.72.

(C) Information to be supplied to the NRC shall include, but is not limited to, the following:

(1) Shipper, consignee, carriers, transfer points, modes of shipment; and

(2) A statement of shipment security arrangements, including, if applicable, points where armed escorts transfer responsibility for the shipment.

(vii) Document the preplanning and coordination activities.

(2) Advance Notifications. Prior to the shipment of spent nuclear fuel outside the confines of the licensee's facility or other place of use or storage, a licensee subject to this section shall provide notification to the NRC, in accordance with § 73.72 of this part, and the governor of the State, or the governor's designee, of the spent nuclear fuel shipment. Contact information for each State, including telephone and mailing addresses of governors

and governors' designees, is available on the NRC website at: http://nrc-stp.ornl.gov/special/designee.pdf. A list of the contact information is also available upon request from the Director, Division of Intergovernmental Liaison and Rulemaking, U.S. Nuclear Regulatory Commission, Washington, DC 20555. The licensee shall comply with the following criteria in regard to each notification:

(i) Procedures for submitting advance notification.

(A) The notification must be in writing and sent to the office of each appropriate governor or the governor's designee.

(B) A notification delivered by mail must be postmarked at least 7 days before transport of a shipment within or through the State.

(C) A notification delivered by any other method must reach the office of the governor or the governor's designee at least 4 days before transport of a shipment within or through the State.

(ii) Information to be furnished in advance notification of shipment. The notification must include the following information:

(A) The name, address, and telephone number of the shipper, carrier and receiver of the shipment and the license number of the shipper and receiver.

(B) A description of the shipment as specified by the DOT in 49 CFR 172.202 and 172.203(d).

(C) A listing of the routes to be used within the State.

(iii) Separate Enclosure. The licensee shall provide the following information, in accordance with § 73.22(f)(1), in a separate enclosure to the written notification:

(A) The estimated date and time of departure from the point of origin of the shipment;

(B) The estimated date and time of entry into the State;

(C) The estimated date and time of arrival of the shipment at the destination;

(D) For the case of a single shipment whose schedule is not related to the schedule of any subsequent shipment, a statement that schedule information must be protected in accordance with the provisions of §§ 73.21 and 73.22 until at least 10 days after the shipment has entered or originated within the State; and

(E) For the case of a shipment in a series of shipments whose schedules are related, a statement that schedule information must be protected in accordance with the provisions of §§ 73.21 and 73.22 until 10 days after the last shipment in the series has entered or originated within the State, and an estimate of the date on which the last shipment in the series will enter or originate within the State.

(iv) Revision notice. A licensee shall notify by telephone a responsible individual in the office of the governor or in the office of the governor's designee of any schedule change that differs by more than 6 hours from the schedule information previously furnished in accordance with § 73.37(b)(2)(iii), and shall inform that individual of the number of hours of advance or delay relative to the written schedule information previously furnished.

(v) Cancellation notice. Each licensee who cancels a shipment for which advance notification has been sent shall send a cancellation notice to the governor or to the governor's designee of each State previously notified and to the NRC's Director, Division of Security Policy, Office of Nuclear Security and Incident Response. The licensee shall state in the notice that it is a cancellation and identify the advance notification that is being canceled.

(vi) Records. The licensee shall retain a copy of the preplanning and coordination activities, advance notification, and any revision or cancellation notice as a record for 3 years in accordance with § 73.70.

(3) Transportation Physical Protection System.

(i) The physical protection system established in accordance with § 73.37(a)(1) shall include armed escorts to protect spent nuclear fuel shipments and a movement control center staffed and equipped to monitor and control spent nuclear fuel shipments, to communicate with local law enforcement authorities, and to respond to safeguards contingencies.

(ii) The movement control center must be staffed continuously by at least one individual who will actively monitor the progress of the spent nuclear fuel shipment and who has the authority to direct the physical protection activities.

(iii) The movement control center personnel must monitor the shipment continuously, i.e., 24-hours per day, from the time the shipment commences, or if delivered to a carrier for transport, from the time of delivery of the shipment to the carrier, until safe delivery of the shipment at its final destination, and must immediately notify the appropriate agencies in the event of a safeguards event in accordance with the provisions of § 73.71.

(iv) The movement control center personnel and the armed escorts must maintain a written log for each spent nuclear fuel shipment, which will include information describing the shipment and significant events that occur during the shipment. The log must be available for review by authorized NRC personnel for a period of at least 3 years following completion of the shipment.

(v) The licensee shall develop, maintain, revise and implement written transportation physical protection procedures which address the following:

(A) Access controls to ensure no unauthorized persons have access to the shipment and safeguards information;

(B) Duties of the movement control center personnel, drivers, armed escorts and other individuals responsible for the security of the shipment;

(C) Reporting of safeguards events in accordance with § 73.71;

(D) Communications protocols that include a strategy for the use of authentication and duress codes, the management of refueling or other stops, detours, and the loss of communications, temporarily or otherwise; and

(E) Normal conditions operating procedures.

(vi) The licensee shall retain as a record the transportation physical protection procedures for 3 years after the close of period for which the licensee possesses the spent nuclear fuel.

(vii) The transportation physical protection system shall:

(A) Provide that escorts (other than members of local law enforcement agencies, or ship's officers serving as unarmed escorts) have successfully completed the training required by Appendix D of this part, including the equivalent of the weapons training and qualifications program required of guards, as described in sections III and IV of Appendix B of this part, to assure that each such individual is fully qualified to use the assigned weapons;

(B) Provide that shipment escorts make calls to the movement control center at random intervals, not to exceed 2 hours, to advise of the status of the shipment for road and rail shipments, and for sea shipments while shipment vessels are docked at U.S. ports; and

(C) Provide that at least one armed escort remains alert at all times, maintains constant visual surveillance of the shipment, and periodically reports to the movement control center at regular pre-set intervals during periods when the shipment vehicle is stopped, or the shipment vessel is docked.

(4) Contingency and Response Procedures.

(i) In addition to the procedures established in accordance with § 73.37(b)(3)(v), the licensee shall establish, maintain, and follow written contingency and response procedures to

address threats, thefts, and radiological sabotage related to spent nuclear fuel in transit.

(ii) The licensee shall ensure that personnel associated with the shipment shall be appropriately trained regarding contingency and response procedures.

(iii) The licensee shall retain the contingency and response procedures as a record for 3 years after the close of period for which the licensee possesses the spent nuclear fuel.

(iv) The contingency and response procedures must direct that, upon detection of the abnormal presence of unauthorized persons, vehicles, or vessels in the vicinity of a spent nuclear fuel shipment or upon detection of a deliberately induced situation that has the potential for damaging a spent nuclear fuel shipment, the armed escort will:

(A) Determine whether or not a threat exists;

(B) Assess the extent of the threat, if any;

(C) Implement the procedures developed in accordance with § 73.37(b)(4)(i);

(D) Take the necessary steps to delay or impede threats, thefts, or radiological sabotage of spent nuclear fuel, and

(E) Inform local law enforcement agencies of the threat and request assistance.

(c) Shipments by road. In addition to the provisions of paragraph (b), the physical protection system for any portion of a spent nuclear fuel shipment by road shall provide that:

(1) The transport vehicle is:

(i) Occupied by at least 2 individuals, 1 of whom serves as an armed escort, and escorted by an armed member of the local law enforcement agency in a mobile unit of such agency; or

(ii) Led by a separate vehicle occupied by at least 1 armed escort, and trailed by a third vehicle occupied by at least 1 armed escort.

(2) As permitted by law, all armed escorts are equipped with a minimum of 2 weapons.

This requirement does not apply to local law enforcement agency personnel who are performing escort duties.

(3) The transport vehicle and each escort vehicle are equipped with redundant communication abilities that provide for 2-way communications between the transport, the escort vehicle(s), the movement control center, local law enforcement agencies, and one another at all times. Alternate communications should not be subject to the same failure modes as the primary communication.

(4) The transport vehicle is equipped with NRC-approved features that permit immobilization of the cab or cargo-carrying portion of the vehicle.

(5) The transport vehicle driver has been familiarized with, and is capable of implementing, transport vehicle immobilization, communications, and other security procedures.

(6) Shipments are continuously and actively monitored by a telemetric position monitoring system or an alternative tracking system reporting to a movement control center. A movement control center shall provide positive confirmation of the location, status, and control over the shipment. The movement control center shall implement preplanned procedures in response to deviations from the authorized route or a notification of actual, attempted, or suspicious activities related to the theft, loss, diversion, or radiological sabotage of a shipment. These procedures will include, but not be limited to, the identification of and contact information for the appropriate local law enforcement agency along the shipment route.

(d) Shipments by rail. In addition to the provisions of paragraph (b), the physical protection system for any portion of a spent nuclear fuel shipment by rail shall provide that:

(1) A shipment car is accompanied by 2 armed escorts (who may be members of a local law enforcement agency), at least 1 of whom is stationed at a location on the train that will permit observation of the shipment car while in motion.

(2) As permitted by law, all armed escorts are equipped with a minimum of 2 weapons. This requirement does not apply to local law enforcement agency personnel who are performing escort duties.

(3) The transport vehicle and each escort are equipped with redundant communication abilities that provide for 2-way communications between the transport, the escort vehicle(s), the movement control center, local law enforcement agencies, and one another at all times. Alternate communications should not be subject to the same failure modes as the primary communication.

(4) Rail shipments are monitored by a telemetric position monitoring system or an alternative tracking system reporting to the licensee, third-party, or railroad movement control center. The movement control center shall provide positive confirmation of the location of the shipment and its status. The movement control center shall implement preplanned procedures in response to deviations from the authorized route or to a notification of actual, attempted, or suspicious activities related to the theft, diversion, or radiological sabotage of a shipment. These procedures will include, but not be limited to, the identification of and contact information for the appropriate local law enforcement agency along the shipment route.

(e) Shipments by sea**.** In addition to the provisions of § 73.37(b), the physical protection system for any portion of a spent nuclear fuel shipment that is by sea shall provide that:

(1) A shipment vessel, while docked at a U.S. port is protected by:

(i) Two armed escorts stationed on board the shipment vessel, or stationed on the dock at a location that will permit observation of the shipment vessel; or

(ii) A member of a local law enforcement agency, equipped with normal local law enforcement agency radio communications, who is stationed on board the shipment vessel, or on the dock at a location that will permit observation of the shipment vessel.

(2) As permitted by law, all armed escorts are equipped with a minimum of 2 weapons. This requirement does not apply to local law enforcement agency personnel who are performing escort duties.

(3) A shipment vessel while within U.S. territorial waters shall be accompanied by an individual, who may be an officer of the shipment vessel's crew, who will assure that the shipment is unloaded only as authorized by the licensee.

(4) Each armed escort is equipped with redundant communication abilities that provide for 2-way communications between the vessel, the movement control center, local law enforcement agencies, and one another at all times. Alternate communications should not be subject to the same failure modes as the primary communication.

(f) Investigations. Each licensee who makes arrangements for the shipment of spent nuclear fuel shall immediately conduct an investigation, in coordination with the receiving licensee, of any shipment that is lost or unaccounted for after the designated no-later-than arrival time in the advance notification.

(g) State officials, State employees, and other individuals, whether or not licensees of the Commission, who receive information of the kind specified in § 73.32(b)(2)(iii) shall protect that that information against unauthorized disclosure as specified in §§ 73.21 and 73.22.

3. A new § 73.38 is added to read as follows:

§ 73.38 Background Investigation requirements for unescorted access to irradiated reactor fuel in transit.

(a) *Initial Investigation*. Before allowing an individual to have unescorted access to spent nuclear fuel[2] in transit the licensees shall complete a background investigation of the individual seeking to have unescorted access. The scope of the investigation must encompass at least the past 10 years. The background investigation must include at a minimum:

(1) Fingerprinting and an FBI identification and criminal history records check in accordance with § 73.57.

(2) Verification of true identity. Licensees shall verify the true identity of an individual who is applying to have unescorted access to ensure that the applicant is who they claim to be. A licensee shall review official identification documents (e.g., driver's license, passport, government identification, State, province, or country of birth issued certificate of birth) and compare the documents to personal information data provided by the individual to identify any discrepancy in the information. Licensees shall document the type, expiration, and identification number of the identification, or maintain a photocopy of identifying documents on file in accordance with § 73.38(c). Licensees shall certify and affirm in writing that the identification was properly reviewed and maintain the certification and all related documents for review upon inspection.

(3) Employment history evaluation. Licensees shall verify the individual's employment with each previous employer for the most recent 10 years before the date of application.

(4) Verification of education. Licensees shall verify the individual participated in the education process during the claimed period.

(5) Military history verification. Licensees shall verify the individual was in the military during the claimed period.

[2] For purposes of 10 CFR 73.38, the terms "irradiated reactor fuel" as described in 10 CFR 73.37 and "spent nuclear fuel" are used interchangeably.

(6) Credit history evaluation. Licensees shall ensure that the full credit history of any individual who is applying for unescorted access to spent nuclear fuel in transit is evaluated. A full credit history evaluation must include, but is not limited to, an inquiry to detect potential fraud or misuse of social security numbers or other financial identifiers, and a review and evaluation of all of the information that is provided by a national credit-reporting agency about the individual's credit history. For foreign nationals and United States citizens who have resided outside the United States and do not have established credit history that covers at least the most recent 7 years in the United States, the licensee must document all attempts to obtain information regarding the individual's credit history and financial responsibility from some relevant entity located in that other country or countries.

(7) Criminal history review. The licensee shall evaluate the entire criminal history record of an individual who is applying for unescorted access to spent nuclear fuel in transit to determine whether the individual has a record of criminal activity that may adversely impact his or her trustworthiness and reliability. The scope of the applicant's criminal history review must cover all residences of record for the 10 year period preceding the date of application for unescorted access authorization.

(8) Character and reputation determination. Licensees shall ascertain the character and reputation of an individual who has applied for unescorted access to spent nuclear fuel in transit by conducting reference checks. Reference checks may not be conducted with any person who is known to be a close member of the individual's family, including but not limited to, the individual's spouse, parents, siblings, or children, or any individual who resides in the individual's permanent household. The reference checks must focus on the individual's reputation for trustworthiness and reliability.

(9) The licensee shall also, to the extent possible, obtain independent information to

corroborate that provided by the individual (e.g., seek references not supplied by the individual).

(10) If a previous employer, educational institution, or any other entity with which the individual claims to have been engaged fails to provide information or indicates an inability or unwillingness to provide information within 10 business days of the request, the licensee shall:

(i) Document the refusal, unwillingness, or inability in the record of investigation; and

(ii) Obtain a confirmation of employment, educational enrollment and attendance, or other form of engagement claimed by the individual from at least 1 alternate source that has not been previously used.

(b) Determination of Trustworthiness and Reliability; Documentation. After obtaining and evaluating the information for the background investigation listed above in (a)(1)-(10), the license shall determine whether the individual is trustworthy and reliable and, if the licensee determines that the individual is trustworthy and reliable, the licensee shall document its determination and the basis therefore. The licensee shall maintain records of trustworthiness and reliability determinations in accordance with § 73.38(c) for 5 years from the date the individual no longer requires access to spent nuclear fuel.

(c) Protection of Information

(1) Licensees shall protect background investigation information from unauthorized disclosure.

(2) Licensees may not disclose the background investigation information collected and maintained to persons other than the subject individual, his/her representative, or to those who have a need to know in performing assigned duties related to the process of granting or denying unescorted access to spent nuclear fuel in transit. No individual authorized to have access to the information may re-disseminate the information to any other individual who does

not have a need to know.

(3) The personal information obtained on an individual from a background investigation may be transferred to another licensee:

(i) Upon the individual's written request to the licensee holding the data to re-disseminate the information contained in his/her file; and

(ii) The acquiring licensee verifies information such as name, date of birth, social security number, sex, and other applicable physical characteristics for identification.

(4) The licensee shall make background investigation records obtained under this section available for examination by an authorized representative of the NRC to determine compliance with applicable laws and regulations.

(5) The licensee shall retain all fingerprint and criminal history records received from the FBI, or a copy if the file has been transferred, on an individual (including data indicating no record) for 5 years after termination or from the date the individual no longer requires unescorted access to spent nuclear fuel in transit.

(d) For purposes of this section, licensees are not required to obtain the fingerprints of any person who has been fingerprinted, pursuant to an NRC order or regulation, for an FBI identification and criminal history records check within the 5 years of the effective date of this rule.

(e) ***Reinvestigations.*** Licensees shall conduct fingerprinting and FBI identification and criminal history records check, a criminal history review, and credit history re-evaluation every 10 years for any individual who has unescorted access authorization to spent nuclear fuel in transit. The reinvestigations must be completed within 10 years of the date on which these elements were last completed and should address the 10 years following the previous

investigation.

4. Revise paragraphs (a), (a)(1), (a)(4), (a)(5) and (b) of § 73.72 to read as follows**:**

§ 73. 72 Requirement for advance notice of shipment of formula quantities of strategic special nuclear material, special nuclear material of moderate strategic significance, or irradiated reactor fuel.

(a) A licensee, other than one specified in paragraph (b) of this section, who, in a single shipment, plans to deliver to a carrier for transport, to take delivery at the point where a shipment is delivered to a carrier for transport, to import, to export, or to transport a formula quantity of strategic special nuclear material, special nuclear material of moderate strategic significance, or irradiated reactor fuel[3] required to be protected in accordance with § 73.37, shall:

(1) Notify in writing the Director, Division of Security Policy, Office of Nuclear Security and Incident Response, using any appropriate method listed in § 73.4. Classified notifications shall be sent to the NRC headquarters classified mailing address listed in appendix A to this part.

* * * * *

(4) The NRC Headquarters Operations Center shall be notified about the shipment status by telephone at the phone numbers listed in appendix A to this part. Classified notifications shall be made by secure telephone. The notifications shall take place at the following intervals:

(i) At least 2 days before commencement of the shipment;

[3] For purposes of 10 CFR 73.72, the terms "irradiated reactor fuel" as described in 10 CFR 73.37 and "spent nuclear fuel" are used interchangeably.

(ii) Two hours before commencement of the shipment; and

(iii) Once the shipment is received at its destination.

(5) The NRC Headquarters Operations Center shall be notified by telephone of schedule changes of more than 6 hours at the phone numbers listed in Appendix A to this part. Classified notifications shall be made by secure telephone.

(b) A licensee who conducts an on-site transfer of spent nuclear fuel that does not travel upon or cross a public highway is exempt from the requirements of this section for that transfer.

Dated at Rockville, Maryland, this_____ day of_____, 2009.

For the Nuclear Regulatory Commission.

_____

Annette Vietti-Cook,
Secretary of the Commission.

Regulatory Analysis for Proposed Rule - Transportation of Spent Nuclear Fuel in 10 CFR Part 73

U.S. Nuclear Regulatory Commission
October 2009

EXECUTIVE SUMMARY

The U. S. Nuclear Regulatory Commission (NRC) is proposing to amend its security regulations pertaining to the transport of irradiated reactor fuel (for purposes of this rulemaking, the terms "irradiated reactor fuel" and "spent nuclear fuel" are used interchangeably). This proposed rulemaking would: (1) establish generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001; (2) establish the acceptable performance standards and objectives for the protection of spent nuclear fuel (SNF) shipments from theft, diversion, or radiological sabotage; (3) ensure that the acceptable performance standards and objectives for SNF shipments apply to all licensees authorized to possess or transport SNF; and (4) address, in part, the requests for NRC rulemaking raised by Nevada petition PRM-73-10.

The analysis presented in this document examines the benefits and costs of the proposed security requirements. The key findings of the analysis are as follows:

- *Total Cost to Industry*. The proposed rule would result in negligible additional total costs. The rule would put into effect for licensees authorized to possess or transport SNF generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001, along with additional security requirements resulting from insights gained while implementing the security orders. The total cost of implementation of the rule would be slightly higher than the cost of the implementation of the orders. The total annual cost for the rule is $967,726. The new requirements that resulted from insights gained while implementing the security orders make up $84,000 of the $967,726 annual costs. The total present value of the costs is estimated at $6.8 million (using a 7-percent discount rate) and $8.3 million (using a 3-percent discount rate) over the next 10 years.

- *Annual Impact to the Economy.* Under the Congressional Review Act of 1996 and as a result of consultations with the Office of Information and Regulatory Affairs of the Office of Management and Budget (OMB), the NRC has determined that this action is a non-major rule. This determination is based on the estimated one-time costs (expected to occur within the first year) of implementing this action for the total industry is not to exceed $1.05 million.

- *Value of Benefits Not Reflected Above*. With the exception of some of the direct monetary savings to industry, the cost figures shown above do not reflect the value of the benefits of the proposed rule. These benefits are evaluated qualitatively in Section 3.1. This regulatory analysis concluded the costs of the rule are justified in view of the qualitative benefits.

- *Costs to NRC.* The annual cost of the rule to the NRC is negligible. The rule would put into effect for licensees authorized to possess or transport SNF generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001, along with additional security requirements resulting from insights gained while implementing the security orders. As such, the rule development requires no additional cost. The total annual costs are approximately $4,000. NRC is not expected to incur any one-time costs as a result of the rule.

- *Decision Rationale*. Although the NRC did not quantify the benefits of this rule, the staff did qualitatively examine benefits and concluded that the rule would provide safety and security-related benefits. The sum total of the requirements in the proposed rule would be to establish the acceptable performance standards and objectives for the protection SNF shipments from theft, diversion, or radiological sabotage. Specifically, the proposed rule would require the following: (1) armed guards throughout the rail and road route; (2) procedures for normal and contingency responses; (3) the training of personnel; (4) continuous and active monitoring of the SNF shipment by a movement control center; (5) shipment preplanning and coordination with States; (6) constant visual surveillance by armed escort; (7) 2-way redundant communication capabilities; (8) a minimum of 2 weapons for armed guards; (9) additional NRC notifications; (10) armed escort instructions on the use of deadly force; and (11) background investigations of individuals granted unescorted access to SNF. The additional security requirements in the proposed rulemaking provide a substantial increase in the protection of the common defense and security and the public health and safety from SNF in transit. The costs of the proposed rulemaking are justified based on the qualitative benefits.

The proposed amendments would affect NRC licensees who transport, or deliver to a carrier for transport, in a single shipment, a quantity of irradiated reactor fuel in excess of 100 grams (0.22 lbs) in net weight exclusive of cladding or other material, which has a total radiation level in excess of 1 Sv (100 rems) per hour at a distance of .91 meters (3 feet) from any accessible surface without regard to any intervening shielding.

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ACRONYMS AND ABBREVIATIONS

CFR	Code of Federal Regulations
CoC	Certificate of Compliance
COMSECY	A paper originating from a Commissioner who wants to bring an item to the attention of his or her fellow Commissioners, or a paper that originates from the NRC Executive Director for Operations (EDO), the Chief Financial Officer (CFO), or other Commission-level office seeking guidance from the Commission.
FR	Federal Register
INL	Idaho National Laboratory
ISFSI	Independent Spent Fuel Storage Installation
LLEA	Local Law Enforcement Agency
NRC	U. S. Nuclear Regulatory Commission
NUREG	NRC Nuclear Regulation
NUREG/BR	NRC Nuclear Regulation/Brochure
SAR	Safety Analysis Report
SECY	A paper addressing policy, rulemaking, or adjudicatory matters submitted to the Commission for consideration in a document style and format established specifically for the purpose.
SER	Safety Evaluation Report
SGI	Safeguard Information
SNF	Spent Nuclear Fuel
SOC	Statements of Consideration

1. Introduction

The NRC is proposing to amend 10 CFR Part 73 to specify additional security requirements for licensees who transport SNF.

A statement of the problem, background on the proposed rule, and regulatory objectives are discussed in the following sections. Section 2 identifies the alternatives evaluated in this rulemaking. Section 3 describes the analysis method and input assumptions. Section 4 describes the Results. Section 5 discusses the Decision Rationale and Implementation of the preferred alternative, and Section 6 lists the References used in this Regulatory Analysis.

1.1 Statement of the Problem and Reasons for Rulemaking

The current 10 CFR 73.37 has changed little since its promulgation in 1980. However, there have been significant changes in the threat environment. After the terrorist attacks of September 11, 2001, the NRC issued a series of security-related orders to specific licensees. In the area of SNF transit security, the orders were issued to licensees who ship or receive SNF and those planning to ship or receive SNF. The orders were issued as immediately effective under NRC's authority to protect the common defense and security under the Atomic Energy Act of 1954, as amended. The requirements put in place by the orders supplement the existing regulatory requirements. These additional security requirements are primarily intended to provide reasonable assurance of preventing the theft, diversion, or sabotage of SNF in transit.

This proposed rulemaking would establish generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001. The proposed rulemaking would establish the acceptable performance standards and objectives for the protection of SNF shipments from theft, diversion, or radiological sabotage. The proposed amendments would apply to those licensees authorized to possess or transport SNF. The proposed rulemaking would also add several new requirements not derived directly from the security order requirements, but developed as a result of insights gained by performing security assessments of potential security vulnerabilities associated with SNF transportation.

In addition, the proposed rulemaking would consider the State of Nevada June 22, 1999, petition for rulemaking (PRM-73-10). The petition requested that the NRC initiate rulemaking to strengthen its regulations governing the physical protection of SNF shipments against sabotage and terrorism. The proposed rulemaking would address, in part, the requests for NRC rulemaking raised by PRM-73-10.

1.2 Background

1.2.1 Current Regulatory Framework

On June 15, 1979, the NRC published in the *Federal Register* (44 FR 34466) an interim final rule that established its first requirements for the physical protection of SNF in transit. The interim final rule added 10 CFR 73.37, "Requirements for Physical Protection of Irradiated Reactor Fuel in Transit" to 10 CFR Part 73. After considering public comments, the Commission affirmed the interim final rule on June 3, 1980 (45 FR 37399).

The current 10 CFR 73.37 has changed little since its promulgation in 1980. These regulations require licensees to put in place a physical protection system for SNF shipments that meets the following objectives: (1) minimize the possibilities for radiological sabotage of SNF shipments, especially within heavily populated areas and (2) facilitate the location and recovery of SNF shipments that may have come under the control of unauthorized persons. The regulation also provides for: (1) the early detection and assessment of attempts to gain unauthorized access to or control over SNF shipments, (2) the notification to the appropriate response forces of any sabotage events, and (3) the impeding of attempts at radiological sabotage of SNF shipments in heavily populated areas or attempts to illicitly move such shipments into heavily populated areas.

1.2.2 NRC Orders

The NRC issued EA -02-109, "Issuance of Order for Interim Safeguards and Security Compensatory Measures for the Transportation of SNF Greater than 100 Grams" on October 3, 2002. The orders were issued to licensees who had shipped or received SNF within 3 years and who planned to ship or receive SNF in the foreseeable future. The specifics of the orders are protected as SGI, as such; their details cannot be discussed in this document. In general, the security requirements resulted in enhancements in the following areas: preplanning and coordination with States and LLEA; improved communications among movement control personnel; the development of normal and contingency procedures; a minimum number of weapons for escorts and more thorough background investigations of individuals associated with the SNF shipment.

1.3 Regulatory Objectives

The NRC's objectives for the proposed rulemaking are to: (1) establish generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001; (2) establish the acceptable performance standards and objectives for the protection of SNF shipments from theft, diversion, or radiological sabotage; (3) ensure that the acceptable performance standards and objectives for SNF shipments apply to all licensees authorized to possess or transport SNF; and (4) address, in part, the requests for NRC rulemaking raised by Nevada petition PRM-73-10.

2. IDENTIFICATION OF ALTERNATIVE APPROACHES

The NRC considered 2 alternatives for the proposed rule, described below.

2.1 Alternative 1: No-Action

Alternative 1 is the No-Action Alternative. Under the No-Action Alternative, the NRC would make no changes to the current regulations. Licensees who are subject to the NRC security orders would continue to comply with these orders. This alternative would not reflect the several new requirements not derived directly from the security order requirements, but developed as a result of insights gained by performing security assessments of potential security vulnerabilities associated with SNF transportation, and from implementation of the security orders. Thus, this alternative would be inconsistent with the requirements the NRC has determined are needed to establish the acceptable performance standards and objectives for the protection of SNF shipments from theft, diversion, or radiological sabotage.

In addition, this alternative would place an administrative burden on the NRC. Unlike the requirements of a rule, the orders apply only to the licensees named on the document and would not apply to new licensees. The NRC would be required to issue orders to each new licensee seeking to transport SNF and would be required to issue new orders to licensees receiving the initial order to address the new requirements not derived from the orders. Thus, this alternative is less efficient and effective than the development of the proposed regulation. As such, the No-Action Alternative would be inconsistent with NRC's organizational excellence objectives of ensuring that its actions are efficient, effective, realistic, and timely.

The No-Action Alternative would also be inconsistent with NRC's openness strategy. This alternative would not allow for the accurate and timely sharing of information with the public about NRC's regulatory activities relative to SNF shipment security. Nor would this alternative provide for fair, timely, and meaningful stakeholder involvement in NRC's development of SNF transit requirements.

2.2 Alternative 2: Rulemaking to Amend Regulations to Enhance SNF Transit Security

Under Alternative 2: Rulemaking, NRC would conduct a rulemaking to enhance the physical security of SNF shipments. These changes would include revisions to 10 CFR 73.37, minor revisions to 10 CFR 73.72, and the creation of a new 10 CFR 73.38. Through a comprehensive rulemaking, the NRC would: (1) establish generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001; (2) establish the acceptable performance standards and objectives for the protection of SNF shipments from theft, diversion, or radiological sabotage; (3) ensure that the acceptable performance standards and objectives for SNF shipments apply to all licensees authorized to possess or transport SNF; and (4) address, in part, the requests for NRC rulemaking raised by Nevada petition PRM-73-10.

This alternative would be consistent with NRC's organizational excellence objectives of ensuring that its actions are efficient, effective, realistic, and timely. The rulemaking alternative is more efficient and effective than the continued issuance and re-issuance of orders. It would also be consistent with NRC's openness strategy. This alternative, through the rulemaking process, would provide for fair, timely and meaningful stakeholder involvement in NRC's development of SNF transit requirements.

The NRC has estimated the benefits and costs of this alternative, as described in Section 3 and 4 of this regulatory analysis. The NRC has pursued Alternative 2: Rulemaking for the reasons discussed in Section 5.

The following cross reference table outlines the rule changes.

CROSS-REFERENCE TABLE 2.1

Cross Reference of Proposed Regulations with Existing Regulations

PROPOSED REGULATION	EXISTING REGULATION
73.37 (a)(1)	73.37 (a)(1)
73.37 (a)(2)	73.37 (a)(2)
73.37 (b)(1)(i)-(iv)	New (no existing equivalent)
73.37 (b)(1)(v)(A)	73.37(b)(8)
73.37 (b)(1)(v)(B)	73.37(b)(6)
73.37 (b)(1)(v)(C)	New (no existing equivalent)
73.37 (b)(1)(v)(D)	New (no existing equivalent)
73.37 (b)(1)(vi)	73.37(b)(6)
73.37 (b)(1)(vii)	73.37(b)(7)
73.37 (b)(1)(vii)(A)	New (no existing equivalent)
73.37 (b)(1)(vii)(B)	73.37(b)(7)
73.37 (b)(1)(vii)(C)	73.37(b)(7)
73.37 (b)(1)(viii)	New (no existing equivalent)
73.37 (b)(1)(ix)	New – incorporates 73.21&73.22 Revisions
73.37 (b)(2)	73.37 (b)(1) & 73.37(f)
73.37 (b)(2)(i)	73.37 (b)(1)
73.37 (b)(2)(ii)	73.37(f)
73.37 (b)(2)(iii)	73.37(f)(4)
73.37 (b)(2)(iv)	73.37(f)(4)
73.37 (b)(2)(v)	73.70
73.37 (b)(3)(i)	New (no existing equivalent)
73.37 (b)(3)(ii)	73.37(b)(4)
73.37 (b)(3)(iii)	73.37(b)(4)
73.37 (b)(3)(iv)	73.37(b)(5)
73.37 (b)(3)(v)	New (no existing equivalent)
73.37 (b)(3)(vi)	73.37(b)(3)
73.37 (b)(3)(vii)(A)	73.37(b)(10)
73.37 (b)(3)(vii)(B)	73.37(b)(11)
73.37 (b)(3)(vii)(C)	73.37(b)(9)
73.37 (b)(3)(viii)	73.37(b)(3)
73.37 (b)(3)(xi)	New – incorporates 73.21&73.22 Revisions
73.37 (b)(4)(i)	73.37(b)(2)
73.37 (b)(4)(ii)	73.37(b)(2)
73.37(b)(4)(iii)	73.37(b)(2)
73.37(b)(4)(iv)	73.37(b)(3)
73.37(b)(4)(v)	New – incorporates 73.21&73.22 Revisions
73.37(c)	73.37(c)
73.37(c)(1)	73.37(c)(1)
-------(none-paragraph deleted from existing)	73.37(c)(2)
73.37(c)(2)	New – replaces 73.37(c)(3)
73.37(c)(3)	73.37(c)(4)

PROPOSED REGULATION	EXISTING REGULATION
73.37(c)(4)	73.37(c)(5)
73.37(c)(5)	New (no existing equivalent)
73.37(c)(6)	New – incorporates 73.21&73.22 Revisions
73.37(d)	73.37(d)
73.37(d)(1)	73.37(d)(1)
-------(none-paragraph deleted from existing)	73.37(d)(2)
73.37(d)(2)	New – replaces 73.37(d)(3)
73.37(d)(3)	New (no existing equivalent)
73.37(d)(4)	New – incorporates 73.21&73.22 Revisions
73.37(e)(1)	73.37(e)(1)
73.37(e)(2)	73.37(e)(2)
73.37(e)(3)	New – replaces 73.37(e)(3)
73.37(e)(4)	New – incorporates 73.21&73.22 Revisions
	73.37(f) moved to 73.37 (b)(2)(ii)-(iv)
73.37(f)(1)	New – incorporates 73.71 reporting provisions
73.37(f)(2)	New – incorporates 73.21&73.22 Revisions
73.37(g)	73.37(g) & incorporates 73.21&73.22 Revision
73.38	New-incorporates background investigations
73.72(a)(1)	73.72(a)(1)
73.72(a)(4)(i)-(iii)	73.72(a)(4)
73.72(a)(5)	73.72(a)(5)
-------(none-exemption deleted from existing)	73.72(b)
73.72(b)	New (no existing equivalent-new exemption)

3. ANALYSIS OF VALUES AND IMPACTS

The 2 subsections below describe the analysis conducted to identify and evaluate the values and impacts resulting from the proposed rule. The main analysis is presented in Subsection 3.1. and a second analysis called the pre-order analysis is presented in Subsection 3.2.

3.1 Main Analysis

The main analysis measures the incremental values and impacts of the proposed rule alternative relative to the No-Action Alternative.

3.1.1 Baseline for the Main Analysis

The baseline used in the main analysis is the No-Action Alternative, which would not involve any rulemaking and would keep the current regime of security orders in place. This baseline assumes full compliance with existing NRC requirements, including current regulations and orders. This is consistent with NUREG/BR-0058, “Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission,” Rev. 4, which states that, “in evaluating a new requirement..., the staff should assume that all existing NRC requirements have been implemented.” An additional assumption of the baseline for this analysis is that the Commission would issue new orders to licensees who plan to ship SNF in the future and did not receive the initial orders, and the Commission would issue new orders to licensees receiving the initial order to address the new requirements not derived from the orders.

3.1.2 Assumptions

The analysis assumes that any one-time implementation costs already occurred when the orders were issued. The rulemaking and the No-Action Alternative assume that one -time costs have already occurred and are not factored into the analysis. Ongoing costs of operation related to the rule are assumed to begin in 2010, and are modeled on an annual cost basis. Ongoing costs related to the No-Action Alternative are assumed to be ongoing and begin in 2010 and are modeled on an annual cost basis. The analysis calculated cost and savings over a 10-year period, with each year's costs or savings discounted back at a 7-percent and 3-percent discount rate, in accordance with NUREG/BR-0058, "Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission," Rev. 4.

For the analysis, the NRC assumed that 20 shipments a year would be affected by the regulation under both the No-Action Alternative and the Rulemaking Alternative. The 20 shipments would break down to 10 shipments via highway and 10 railways. The NRC does not anticipate any shipments via waterways. The NRC estimates that the shipments would pass through or crosses on average of 5 States per shipment. The NRC estimates that 5 shipments annually would originate in ports due to international shipment. These shipments would be shipped from port via highway or railway depending on the licensee's need. The NRC anticipates 5 shipments annually would incur some issue(s) which would require revisions to the schedule. In addition, 1 shipment would be canceled over a 3-year period. The 20 shipments would impact 18 licensees on average annually as 2 licensees would ship twice. Also, the NRC estimates that 1 shipment in a 3-year period would incur an "event" which would require reporting and investigation.

3.1.3 Identification of Affected Attributes

The attributes were identified using the list of potential attributes provided in Chapter 5 of NUREG/BR-0184, "Regulatory Analysis Technical Evaluation Handbook." Each attribute listed in Chapter 5 was evaluated. The baseline for this analysis assumes full compliance with existing requirements and any future orders the Commission may issue. The following attributes would be affected by the proposed rule:

- *Regulatory Efficiency* – The proposed rule would enhance regulatory efficiency by placing in the regulations generically applicable security requirements similar to those previously imposed by Commission orders.

- *Safeguards and Security Considerations* – The proposed rule would establish the acceptable performance standards and objectives for the protection of SNF in transit that would provide high assurance that the transport of SNF is not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety.

- *Public Health (Accident)* – The proposed rule would reduce the risk that public health would be affected by radiological releases resulting from radiological sabotage.

- *Occupational Health (Accident)* – The proposed rule would reduce the risk that occupational health would be affected by radiological releases resulting from radiological sabotage.

- *Industry Implementation* – The proposed rule would require licensees to make revision to their Transportation Physical Security Plans, Safeguards Contingency Plans, and Training and Qualification Plans, among other implementation activities.

- *Industry Operation* – The proposed rule would require licensees to implement additional security activities beyond those currently required.

- *NRC Implementation* – The proposed rule would require the NRC to revise guidance and inspection procedures.

- *NRC Operation* – The proposed rule would require the NRC Operations Center to receive additional notifications.

- *Off-Site Property* – The proposed rule would reduce the risk that off-site property would l be affected by radiological releases resulting from radiological sabotage.

- *Other Government* – The proposed rule would require additional State and LLEAs interaction with licensees and the NRC.

- *Improvements in Knowledge* – The proposed rule would result in an increase in the information relative to the SNF shipments.

- *Environmental Considerations* – The proposed rule would result in a decrease of the potential risk of environmental contamination that could result from theft, diversion or radiological sabotage of SNF shipments.

Relative to the main analysis baseline, the proposed rule would *not* be expected to affect the following attributes:

- *Public Health (Routine)*
- *Occupational Health (Routine)*
- *General Public*
- *Antitrust Considerations*

3.1.4 Analytic Methodology

This subsection describes the process used to evaluate the incremental values (benefits) and impacts (costs) associated with the proposed rule relative to the baseline described in 3.1.1 (above). The benefits include desirable changes in affected attributes, *e.g.*, monetary savings and improved safety. The costs include undesirable changes in affected attributes, *e.g.*, increased monetary costs and radiation exposure levels.

Industry implementation and operation and NRC implementation and operation are quantitatively evaluated. Quantitative analysis requires a baseline characterization. This analysis includes: (1) the average number of shipments affected, (2) the nature of current activities conducted, (3) the types of new or modified systems and procedures to be implemented, or would no longer be implemented, (4) and the number of hours and costs entailed in carrying each procedure out.

Licensees may, however, respond differently to the rule. Their responses are dependent on site-specific characteristics, such as: (1) site physicality; (2) current contingency, security, training and qualification plan contents; and (3) the operations' organizational and management structure. It is also dependent upon the number of shipments anticipated and the number of States each shipment would pass through, which would require additional efforts in terms of planning and coordination. Because individual licensee information, in a large part, is considered "safeguards information" (under § 73.21), this analysis only examines licensees in the aggregate. Nevertheless, the analysis proceeds quantitatively for these attributes by making generalizing assumptions.

Due to the difficulty in quantifying the impact of this proposed rule, the analysis primarily relies upon a qualitative evaluation. Quantification of any of these attributes would require estimation of the frequency rate of attempted radiological sabotage and the impact of those attempts.

In accordance with OMB guidance and NUREG/BR-0058, Rev. 4, the results of the analysis are presented using both 3 percent and 7 percent real discount rates. The NRC seeks public comments on the accuracy of this regulatory analysis' assumptions and on the validity of the proposed rules' value and impact estimation methods.

3.1.5 Analysis of Values

The proposed rule would have a significant qualitative value or benefit associated with improving regulatory efficiency and increasing public confidence.

3.1.6 Analysis of Impact

There would be no impacts or costs associated with the proposed rule because of the full compliance baseline assumption. In other words, all costs would have been incurred under the baseline condition, so no costs are associated with the proposed rule.

3.1.7 Preferred Alternative

The proposed rule would have positive qualitative benefits and no costs. As such, it is the preferred alternative.

3.2 Pre-Order Analysis

The pre-order analysis measures the incremental costs and savings of the proposed rule relative to a baseline prior to the issuance of Commission orders regarding protection of SNF. This analysis accounts for incremental costs and savings associated with the Commission orders. It is presented here to give the reader an idea of the costs and savings that have already been incurred or would be incurred absent the proposed rule as a result of Commission orders.

3.2.1 Baseline for the Pre-Order Analysis

The pre-order analysis is based upon the regulatory requirements placed upon SNF in transit pre-9/11. As such, this analysis is based upon the existing requirements in §§ 73.37 and 73.72.

3.2.2 Identification of Affected Attributes in the Pre-Order Analysis

Using the list of potential attributes provided in Chapter 5 of NUREG/BR-0184, "Regulatory Analysis Technical Evaluation Handbook," this subsection identifies the attributes that the proposed rule could affect. Relative to the pre-order baseline, the proposed rule would be expected to affect the following attributes:

Table 3-1: Listing of Expected Affected Attributes by the Proposed Rule Relative to the Pre-Order Baseline

Attribute	Expected Change
Industry Implementation	Licensees would need to make revisions to Transportation Physical Security Procedures, Training and Qualification Plans, among other implementation activities.
Industry Operation	Licensees would need to conduct additional security activities beyond those currently required.
NRC Implementation	The NRC would develop or revise guidance and inspection procedures and review changes to licensee security plans.
NRC Operation	The NRC Operations Center would answer calls from licensees prior to the shipment of SNF and when the shipment arrives at its destination.
Regulatory Efficiency	The proposed regulations would enhance regulatory efficiency vis-à-vis regulatory and compliance improvements.
Safeguards and Security	Increased safeguards and security would provide high assurance that the SNF activities do not constitute an unreasonable risk to the common defense and security as well as public heath and safety and the environment.
Public Health	The risk of radiological sabotage, which would affect the public health and the environment, would be reduced.
Occupational Health	The risk of radiological sabotage, which would affect the occupational health, would be reduced.
Other Government	State and LLEAs interaction with licensees and the NRC would increase.
Offsite Property	The risk that off-site property would be affected by radiological releases resulting from radiological sabotage would be reduced.
Improvements in Knowledge	The level of knowledge on shipments of SNF would be increased.
Environmental Considerations	The risk of environmental contamination that could result from malevolent use of lost, stolen or diverted radioactive material would decrease.
Other considerations	Public confidence in the NRC would increase by providing accurate and timely information to the public about the NRC's security activities and by providing fair, timely and meaningful stakeholder involvement in the NRC decision-making process through rulemaking process.

Relative to the pre-order baseline, the proposed rule would *not* be expected to affect the following attributes:

- *Public Health (Routine*)
- *Occupational Health (Routine*)
- General Public
- *Antitrust Consi*derations

3.2.3 Methodology of the Pre-Order Analysis

This subsection describes the methodology used to analyze the incremental values and impacts associated with the proposed rule relative to the pre-order baseline described in 3.2.1 above. The values (savings) include any desirable changes in the affected attribute, while the impacts (costs) include any undesirable changes in the affected attribute. This analysis relies on both quantitative and qualitative analyses of the affected attributes. The quantitative analysis involves the assessment of costs and savings associated with the proposed rule. The qualitative analysis involves a discussion of those attributes that the NRC was not able to quantify.

In accordance with OMB guidance and NUREG/BR0058, Rev. 4, the results of the analysis are presented using both 3 percent and 7 percent real discount rates.

3.2.4 Affected Universe of the Pre-Order Analysis

The orders were issued to licensees who had shipped or received SNF during 1999 through 2002, and who expected to ship or receive SNF by June 2004. Since 2002, orders have been issued only to licensees that have given NRC advance notification of a SNF shipment. The licensees that would be affected by the proposed rule relative to the pre-order baseline are the commercial power reactor sites, decommissioning reactor sites, research and test reactors and ISFSI and a limited number of Part 70 licensees. For the pre-order analysis, it is assumed that only the 25 licensees that were issued SNF transportation security orders have incurred costs. However, even the licensees that have received the SNF transportation orders would incur costs in the pre-order analysis because the proposed rule adds new requirements that resulted from insights gained while implementing the security orders.

3.2.5 Analysis of Values in the Pre-Order Analysis

There are no *quantifiable* values (i.e. benefits) associated with the proposed rule. The qualitative values of the proposed rule are associated with safeguard and security considerations or the decreased risk of a security-related event, such as an act of sabotage or a terrorist attack. Increasing the security of SNF decreases this risk and increases the common defense and security of the nation. Other qualitative values that are positively affected by the decreased risk of a security-related event include public and occupational health due to an accident or event and the risk of damage to offsite property. Finally, public confidence in the NRC and its licensees could increase because the proposed rule would establish in the regulations the minimum performance standards and objectives for the protection of SNF shipments from theft, diversion, or radiological sabotage.

3.2.6 Analysis of Impacts in the Pre-Order Analysis

The assumptions used in analyzing the quantifiable impacts (costs) associated with the proposed rule are discussed in this subsection. The hourly rate applied to labor hours is $100 (NRC) and $100 (industry). These are NRC's incremental labor rate which includes only those variable costs associated with implementation and operation costs of the orders and the proposed rule. Use of this labor rate is consistent with Section 5.2 of NUREG/CR–4627, Generic Cost Estimates. It is assumed that licensees, applicants, and State contacts would have a similar labor rate.

3.2.6.1 Licensee Costs

Licensees would bear the largest share of this rule's costs with implementation. The costs are estimated to be $968,726 for the first year. These costs include establishing a communication program (which includes maintaining 2 distinct means of communication), an armed transit personnel program, and a video surveillance program for equipping various modes of SNF transit.

3.2.6.2 NRC Costs

NRC costs annually would be minimal. The costs are estimated to be $4,000. Costs would be bore from advance notifications and potential theft investigations.

3.2.6.3 State Government Costs

State Government costs annually would be minimal. The costs are also estimated to be $4,000. Costs would be bore from advance notifications and potential theft investigations.

3.2.7 Results of the Pre-Order Analysis

The total annual costs associated with the proposed rule relative to the pre-order baseline over 10 years at a 7 percent discount rate are estimated to be $6.80 million. Of this amount, shipping costs account for $542,056 annually and the other costs for non-LLEA armed response, preplanning and coordination activities, documentation, advance notification and cancellations, recordkeeping, background checks, and investigations account for $362,361 annually. At a 3 percent discount rate the total estimated annual operation costs of the proposed rule over 10 years would be $8.25 million. Of this amount, shipping costs account for $563,107 annually and the other costs for non-LLEA armed response, preplanning and coordination activities, documentation, advance notification and cancellations, recordkeeping, background checks, and investigations account for $376,433 annually.

Although there are no quantitative benefits under the proposed rule alternative, the expected qualitative values contribute significantly to the benefits of the proposed rule relative to the pre-order baseline. These qualitative values include (1) a positive effect on public and occupational health, (2) increased protection of onsite and offsite property, (3) increased protection of the common defense and security of the nation, and (4) increased public confidence in the NRC and licensees.

4. Results

This section presents results of values and impacts (i.e., costs) that are expected to be derived from the proposed rule. To the extent that the affected attributes could be analyzed quantitatively, the net effect of each alternative has been calculated and is presented below. However, some values and impacts could be evaluated only on a qualitative basis.

The results of the value-impact analysis are summarized in Tables 4-1 and 4-2. Table 4-3 provides the cost comparison for the 2 alternatives. The Rulemaking Alternative would result in no additional costs when compared to No-Action Alternative. The quantitative impact estimated for the Rulemaking Alternative is similar in size as the No-Action Alternative. Both are estimated to cost between $6.80 million and $8.25 million (7-percent and 3-percent discount rate, respectively). The majority of the costs would be incurred by industry.

There are no quantifiable values (i.e. benefits) associated with the rule. The qualitative values of the rule are associated with safeguard and security considerations or the decreased risk of a security-related event, such as theft, diversion, or radiological sabotage of SNF and subsequent use for malevolent purposes. Increasing the transportation security of SNF, the risk is decreased and the common defense and security of the nation is increased. Other qualitative values that are positively affected by the decreased risk of a security-related event include public and occupational health due to an accident or event and the risk of damage to on-site and off-site property. In addition, regulatory efficiency is enhanced by the rule.

TABLE 4-1

Summary of Benefits/Savings and Costs/Burdens for Main Analysis

Net Monetary Savings (or Costs) – Total Present Value in millions	Non-Monetary Benefits/Costs
Alternative 1: No Action **Industry:** $0 **NRC:** ($.13) using a 7% discount rate ($.16) using a 3% discount rate	<u>Qualitative Benefits:</u> Safeguards and Security: Increased level of assurance that SNF shipments are safeguarded. Public Health (Accident): Reduced risk that public health would be affected by radiological releases from malevolent use of radioactive material. Occupational Health (Accident): Reduced risk that occupational health would be affected by radiological releases from malevolent use of radioactive material. Off-site Property: Reduced risk that off-site property would be affected by radiological releases from malevolent use of radioactive material. .

Net Monetary Savings (or Costs) – Total Present Value in millions	Non-Monetary Benefits/Costs
Alternative 2: Rulemaking **Industry:** ($6.67) using a 7% discount rate ($8.09) using a 3% discount rate **NRC:** ($.13) using a 7% discount rate ($.16) using a 3% discount rate	On-site Property: Reduced risk that on-site property would be affected by radiological releases from malevolent use of radioactive material. <u>Qualitative Costs:</u> Regulatory Efficiency: Regulatory efficiency would be reduced by the need to issue security Orders to new licensees. <u>Qualitative Benefits:</u> Safeguards and Security: Increased level of assurance that SNF shipments are safeguarded. Public Health (Accident): Reduced risk that public health would be affected by radiological releases from malevolent use of radioactive material. Occupational Health (Accident): Reduced risk that occupational health would be affected by radiological releases from malevolent use of radioactive material. Off-site Property: Reduced risk that off-site property would be affected by radiological releases from malevolent use of radioactive material. On-site Property: Reduced risk that on-site property would be affected by radiological releases from malevolent use of radioactive material. Regulatory Efficiency: Enhanced regulatory efficiency through regulatory and compliance improvements. <u>Qualitative Costs:</u> None.

4.1 Summary of Results

Table 4-2 presents the net impact of the rule. A positive value below is a cost. A number in parentheses is a negative cost, or a savings.

Table 4-2: Net Impact of Alternatives 1 and 2

Regulatory Alternative	10-year total at 3% discount rate ($)	10-year total 7% discount rate ($)
1. No-Action	$0	$0
2. Rulemaking	$8,254,895	$6,796,899

There are no "new" substantial costs to industry associated with the No-Action Alternative. No changes would be made to the regulation. The Part 73 licensees would continue to operate under the Orders. Costs have already been incurred for carrying out the Orders, which would have to be issued to new licensees.

There are no major contributing savings under the Alternative 2: Rulemaking, other than the decreased risks in theft, diversion, or radiological sabotage of radioactive materials. The NRC would realize savings from not issuing new and updating Orders to new and existing licensees.

- The risk of environmental contamination from radioactive materials would decrease.
- The risk of the affected off-site property would decrease.
- The risk of public health placed in grave danger would decrease.

Table 4-3 shows the estimated costs, by attribute, over the 10-year analysis period.

Table 4-3: Estimated Values and Impacts by Attribute

Attribute	Alternative 2: Rulemaking 10-Year Total Cost (million $)	
	3% Discount	7% Discount
Industry Implementation*	0	0
Industry Operation	(8.09)	(6.67)
NRC Implementation	0	0
NRC Operation	(.16)	(.13)
Total	(8.25)	(6.80)

Note: Total may differ from sum of values due to rounding.
*Industry utilizes standing SNF transit infrastructure

5. DECISION RATIONALE AND IMPLEMENTATION

Two alternatives were evaluated in this Regulatory Analysis. The Alternative 1: No-Action Alternative would maintain the regulations as currently written and continue to retain requirements in orders and to issue new orders and re-issue existing orders as needed.

The Alternative 2: Rulemaking would amend NRC regulations to: (1) establish generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001; (2) establish the acceptable performance standards and objectives for the protection of SNF shipments from theft, diversion, or radiological sabotage; (3) ensure that the acceptable performance standards and objectives for SNF shipments apply to all licensees authorized to possess or transport SNF; and (4) address, in part, the requests for NRC rulemaking raised by Nevada petition PRM-73-10. Specifically, the rule would require the following: (1) armed guards throughout the rail and road route; (2) procedures for normal and contingency responses; (3) the training of personnel; (4) continuous and active monitoring of the SNF shipment by movement control center; (5) shipment preplanning and coordination with States; (6) constant visual surveillance by armed escort; (7) 2-way redundant communication capabilities; (8) a minimum of 2 weapons for armed guards; (9) additional NRC notifications; (10) armed escort instructions on the use of deadly force; and (11) background investigations for individuals granted unescorted access to SNF shipments.

The Alternative 2: Rulemaking would reduce the risk of radiological sabotage damage from SNF shipments, which could have grave consequences to the environment, off-site property, and public health. Therefore, the Rulemaking Alternative is the preferred approach. The proposed rule is planned for publication in the *Federal Register* in 2010.

6. References

NUREG/BR-0058, “Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission,” Rev. 4.

NUREG 0725, “Public Information Circular for Shipments of Irradiated Reactor Fuel,” Rev. 14.

NUREG 0561, “Physical Protection of Shipments of Irradiated Reactor Fuel,” Rev. 1.

NUREG/BR-0184 “Regulatory Analysis Technical Evaluation Handbook, Final Report,” Office of Nuclear regulatory Research, January 1997.

Appendix

73.37 (b)(1)(ii)-Non-LLEA Armed Escort Deadly Force Instruction.

The licensee or the licensee's agent shall ensure that each Non-LLEA armed escort prevent or impede attempted acts of radiological sabotage by using force sufficient to counter the force directed at that person, including the use of deadly force when the there is a reasonable belief that the use of deadly force is necessary in self-defense or in the defense of others, or any other circumstances as authorized by applicable State or Federal law. Licensees have normally relied upon LLEA to escort SNF. In the past 30 years, the NRC is aware of one instance in which a Non-LLEA armed escort, which translates to 1 in 1285 shipments. There is no data to determine whether there would be any increase in the future.

Hours of staff time	8
Wage of staff per hour	$100
Number of people requiring instruction	2
Cost of instruction per licensee	$1,600
Number of hours for a training manager to prepare, training and document training	12
Wage of training manager	$100
Cost for training documentation	$1,200
Subtotal	$2,800
Percentage of shipments per year affected (1/1285)	x 0.000778
Total annual cost	**($2.170)**

73.37(b)(1)(vii)- Document the Preplanning and Coordination Activities

The current regulations do not require the coordination of law enforcement escorts, the sharing of movement control information, or the coordination of safe haven locations. The proposed revisions would require licensees to preplan and coordinate spent fuel shipment information with the States through and to document these activities.

Hours of staff time	40
Cost of staff time per hour	$100
	$4000
Number of shipments	X 20
Total annual cost	**($80,000)**

73.37(b)(2)(v)-Cancellation notice

Although the current regulations require the NRC and the State to receive advanced notifications of shipments, there is no provision requiring the notification of a cancellation of a previously approved advanced notification. This is a rare occurrence. It is assumed that one would occur per 10 annual shipments.

Hours of staff time per call	0.33
Cost of manager's time per hour	$100
	$33.00
Number of cancellations per year (1/10)	
Total annual cost	**($33.00)**

73.37(b)(2)(i-ii) - Written advance notices

The current regulations do not require the coordination of law enforcement escorts, the sharing of movement control information, or the coordination of safe haven locations. The proposed revisions would require licensees to preplan and coordinate spent fuel shipment information with the States through and to document these activities.

Because shipments pass through multiple States, the licensee must coordinate with all of them. For the purposes of the Regulatory Analysis, we are using 5 State average per trip. Thus, the 20 annual shipments would require 100 written advance notices to States and advance notices to the NRC.

Hours of staff time	0.50
Cost of staff time	$100
Number of notifications	120
Total annual cost of advance notifications	**($6,000)**

73.37(b)(3)(v) – Procedures

The licensee shall develop, maintain, revise and implement written transportation physical protection procedures. This procedure is needed to protect SNF during transport and that an adequate response can be taken to emergencies affecting the shipment.

Preparation of security plan and procedures necessary to implement the security program.

Hours of staff time for plan	150
Wage of staff per hour	$100
Impacted Licensees	18
Total annual cost of staff time for plan	**($270,000)**

73.37(b)(1)(vi), (2)(v), (3)(iv-vi), and (4)(iii) - Records

Although there are record requirements in § 73.70, the SNF regulations in § 73.37 are not included. As such, the proposed rulemaking would require include new recordkeeping requirements. These records would include a copy of the preplanning and coordination activities, advance notification, and any revision or cancellation notice. The record is to be maintained for 3 years in accordance with § 73.70.

One time cost of additional file cabinets etc.	$1,000
Number of Shipments	20
Costs of staff (clerical) time	$50
Hours of staff time to maintain records per shipment	3.275
Total Recordkeeping Cost	**($4,275)**

73.37 – Shipping Costs

Industry has averaged 20 shipments of SNF via road and rail (collectively) per year over the last 5 years. For purposes of the regulatory analysis, an assumption of 20 shipments per year is used. NRC regulations define the modes of transport to be by “road,” “rail,” and “sea.” Road and sea modes would incur equal costs; shipping by rail would be lower. Nevertheless for this regulatory analysis, zero shipments by sea are assumed.

Industry has indicated that it is more cost effective to hire contractors to ship SNF through. The below mentioned costs take into consideration all the internal costs that contractors incur to be compliant with NRC orders and proposed regulation.

Ship by Road

Number of shipments	10
Average Trip Transit costs, including rental	$3,000
Average Trip communication Costs	$2,000
Contractor cost	$25,000
Total annual cost by road	$300,000

Ship by Rail

Number of shipments	10A
Average Trip Transit costs, including rental	$1,000
Average Trip communication Costs	$2,000
Contractor cost	$25,000
Total annual cost by rail	$280,000

73.38(a) - Background Investigation

73.38(a) is being added to the CFR to implement an access authorization program that requires background investigations of individuals involved with the transportation of SNF.

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Number of hours to conduct a background check	6
Wage of manager per hour	$100
	$600
Cost of credit history	$20
Cost of taking fingerprints	$10
Cost for fingerprint submission	$36
Cost of background check	$666
Number of individuals needing background checks	36
Total annual cost of background checks	**($23,976)**

73.72 - Advance Notification

The current regulations in 10 CFR 73.72(a)(4) requires NRC notification, by phone, 2 days before the shipment commences. It does not require 2 hour notification before the shipment commences and notification before it reaches its final destination. The proposed rule would require 2 additional notifications of the NRC, 1 to be made 2 hours before the shipment commences, and the other to be made when the shipment reaches its final destination. These additional notifications allow the NRC to monitor SNF shipments and to maximize its readiness in case of a safeguards event. The NRC estimates each phone to take 18 minutes for a total of 54 minutes of notifications per shipment.

Staff time to phone in advance notification per shipment	9
Cost of staff time per hour	$100
Number of shipments per year	20
Total annual cost of advance notifications	**($1,800)**

73.37(f)- Event Investigations

Although licenses are required by § 73.71 to notify the NRC of any safeguards events and to submit a report concerning the event, there is no specific requirement for an investigation. This requirement is being added to address this issue. It is assumed that any safeguard events would be rare. This is a rare occurrence. It is assumed that one would occur every 3 years or every 60 shipments

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Hours of staff time per investigation		40
Hours of staff to write report		40
Wage of staff per hour		$100
Number of investigations per year (1/10)	X	0.33

Total annual event investigation costs **($2640)**

DRAFT ENVIRONMENTAL ASSESSMENT AND FINDING OF
NO SIGNIFICANT IMPACT
FOR THE
PROPOSED RULE
AMENDING 10 CFR 73.37 AND 73.72, AND ADDING NEW 10 CFR 73.38
REQUIREMENTS FOR PHYSICAL PROTECTION OF IRRADIATED REACTOR FUEL IN
TRANSIT

Office of Federal and State Materials and Environmental Management Programs
U.S. Nuclear Regulatory Commission
October 2009

Introduction and Background

The U.S. Nuclear Regulatory Commission (NRC) has long participated in efforts to address radioactive source protection and security. On June 15, 1979, the NRC published in the *Federal Register* (44 FR 34466) an interim final rule that established its first requirements for the physical protection of irradiated reactor fuel[1] in transit. The interim final rule added 10 CFR 73.37, "Requirements for Physical Protection of Irradiated Reactor Fuel in Transit" to 10 CFR Part 73. After considering public comments, the Commission affirmed the interim final rule on June 3, 1980 (45 FR 37399).

The current 10 CFR 73.37 has changed little since its promulgation in 1980. These regulations require licensees to put in place a physical protection system for spent nuclear fuel (SNF) shipments that meets the following objectives: (1) minimize the possibilities for radiological sabotage of SNF shipments, especially within heavily populated areas and (2) facilitate the location and recovery of SNF shipments that may have come under the control of unauthorized persons. The regulation also provides for: (1) the early detection and assessment of attempts to gain unauthorized access to or control over SNF shipments, (2) the notification to the appropriate response forces of any sabotage events, and (3) the

[1] For purposes of this rulemaking, the terms "irradiated reactor fuel" and "spent nuclear fuel" are used interchangeably.

impeding of attempts at radiological sabotage of SNF shipments in heavily populated areas or attempts to illicitly move such shipments into heavily populated areas.

Proposed Action

The NRC is proposing to amend its regulations concerning the security requirements for the shipment of SNF. This proposed rulemaking would establish generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001. The proposed rulemaking would establish the acceptable performance standards and objectives for the protection of SNF shipments from theft, diversion, or radiological sabotage. The proposed amendments would apply to those licensees authorized to possess or transport SNF. The proposed security requirements would address, in part, a 1999 rulemaking petition filed by the State of Nevada (docketed as PRM-73-10) that requests that the NRC initiate rulemaking to strengthen the regulations governing the security of SNF shipments against malevolent acts.

Need for the Proposed Action

Although the current 10 CFR 73.37 has changed little since its promulgation in 1980, there have been significant changes in the threat environment. The terrorist attacks of September 11, 2001, heightened concerns about the use of risk-significant radioactive materials in a malevolent act. After the terrorist attacks of September 11, 2001, the NRC issued a series of security-related orders to specific licensees. In the area of SNF, the orders were issued to licensees who ship or receive SNF and those planning to ship or receive SNF. The orders were issued as immediately effective under NRC's authority to protect the common defense and security under the Atomic Energy Act of 1954, as amended. The requirements put in place by

the orders supplement the existing regulatory requirements. These additional security requirements are primarily intended to provide reasonable assurance of preventing the theft, diversion, or sabotage of SNF fuel in transit.

This proposed rulemaking would establish generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001. The proposed rulemaking would also add several new requirements not derived directly from the security order requirements, but developed as a result of insights gained by performing security assessments of potential security vulnerabilities associated with SNF transportation. The proposed requirements would establish acceptable performance objectives for the protection of SNF in transit from theft, diversion, or sabotage. These requirements would ensure that SNF is shipped in a manner that protects the common defense and security and public health and safety.

Specifically, the proposed rule would require the following: (1) armed guards throughout the rail and road route; (2) procedures for normal and contingency responses; (3) the training of personnel; (4) a telemetric position monitoring system or an alternative tracking system for continuous monitoring of SNF shipments by a movement control center; (5) shipment preplanning and coordination with States; (6) constant visual surveillance by armed escort; (7) 2-way redundant communication capabilities; (8) a minimum of 2 weapons for armed guards; (9) additional NRC notifications; (10) armed escort instructions on the use of deadly force; and (11) background investigations of individuals granted unescorted access to SNF. The additional security requirements would provide reasonable assurance that SNF is shipped in a manner that protects the common defense and security and the public health and safety.

In addition, the proposed rulemaking would consider PRM-73-10. The petition requested that the NRC initiate rulemaking to strengthen its regulations governing the physical protection of SNF shipments against sabotage and terrorism. The proposed rulemaking would

address, in part, the requests for NRC rulemaking raised by PRM-73-10.

Although a security order is legally binding on the licensee receiving the order, a rule makes requirements generically applicable to all licensees. In addition, rulemaking is an open process that allows for public participation.

The Commission could continue to impose the requirements by issuing orders. In addition, unlike the requirements of a rule, the orders apply only to the licensees named in the orders and would not apply to applicants for new licenses. The continued use of security orders would require the NRC to periodically issue orders to new and amended licenses. It is the NRC policy to implement generally applicable requirements in the form of regulations in order to maintain regulatory efficiencies and effectiveness in its regulatory programs. To make the requirements generally applicable to licensees authorized to possess or transport SNF, and to provide for public review and comment, the additional security requirements for SNF shipments need to be implemented by rulemaking.

The proposed amendments would apply to all NRC licensees that are authorized to possess and transport SNF and, who transport or deliver to a carrier for transport, in a single shipment, a quantity of irradiated reactor fuel in excess of 100 grams (0.22 lbs) in net weight exclusive of cladding or other material, which has a total radiation level in excess of 1 Sv (100 rems) per hour at a distance of .91 meters (3 feet) from any accessible surface without regard to any intervening shielding.

Environmental Impact

This environmental assessment focuses on those aspects of the SNF security rulemaking where there is a potential for the requirements to affect the environment. The principal effect of this action is to revise the governing regulations pertaining to the physical protection requirements for SNF in transit and to make generally applicable security requirements similar to those previously imposed by the post-9/11 orders. The NRC has concluded that there will be no significant radiological environmental impacts associated with implementation of the security rule requirements as the proposed requirements are procedural and administrative in nature.

The implementation of the proposed rule's security requirements would not result in significant changes to the licensees' facilities, nor would such implementation result in any significant increase in radiological effluents released to the environment. The standards and requirements applicable to radiological releases and effluents are not affected by the security rulemaking and continue to apply. Similarly, the implementation of the proposed rule's security requirements would not affect occupational or public exposure requirements.

With regard to potential non-radiological impacts, implementation of the rule requirements does not have a significant impact on the environment. No major construction or other earth disturbing activities, on the part of affected licensees, is anticipated in connection with licensees' implementation of the proposed rule's requirements. In addition, the requirements do not affect any historic site and do not affect non-radiological plant effluents. Therefore, there are no significant non-radiological plant effluents. Therefore, there is no significant non-radiological environmental impact associated with this rule.

Accordingly, the NRC concludes that there is no significant environmental impact associated with the rulemaking action.

Alternatives to the Proposed Action

As an alternative to the proposed action, the NRC staff considered not taking the action to revise the security regulations (i.e., the no-action alternative). Not revising the security regulations would leave the current regulatory system in place. The No-Action Alternative is not expected to result in any significant impact to human health or the environment.

Alternative Use of Resources

There are no irreversible commitments of resources determined in this assessment.

Agencies and Persons Consulted

No agencies or persons outside the NRC were contacted in connection with the preparation of this draft environmental assessment. The NRC has sent a copy of the draft environmental assessment and the proposed rule to every State Liaison Officer and requested their comments on the environmental assessment.

Finding of No Significant Impact

The Commission has determined under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in Subpart A of 10 CFR Part 51, that the proposed amendments are not a major Federal action significantly affecting the quality of the human environment, and therefore, an environmental impact statement is not required. The proposed amendments would amend the physical protection requirements for SNF in transit. The proposed amendments are procedural and administrative in nature and would have no significant impact on human health or the environment. The NRC, on the basis of this environmental assessment, has made a finding of no significant impact.