PDR

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 27, 1982

Mr. Daniel Hirsch, President
Committee to Bridge the Gap
Box 1186
Ben Lomond, CA 95005

IN RESPONSE REFER
TO FOIA-82-381

Dear Mr. Hirsch:

This is in further response to a letter dated August 10, 1982, from Dorothy Thompson, in which she requested, pursuant to the Freedom of Information Act, documents relating to the UCLA Lab and research reactors.

Appendix A is a partial list of documents which are relevant to your request. You will subsequently be billed by our Division of Accounting for the enclosed documents.

Additional documents relevant to your request are still undergoing review and segregation by NRC headquarters and our Region V office to remove any safeguards information they may contain. You will be notified of our determination when this review is completed.

Sincerely,

J. M. Felton, Director
Division of Rules and Records
Office of Administration

Enclosures: As stated

Appendix A

1. SECY-79-187, Strengthened Physical Protection Requirements for Fuel Cycle Facilities and Transportation Involving Formula Quantities of Strategic Special Nuclear Material (Short Title - Safeguards Upgrade Rule), 3/16/79. (158 pages)

2. Memo for L. V. Gossick, from Samuel J. Chilk, "Discussion of Safeguards Upgrade Rule," 5/1/79. (1 page)

3. SECY-79-187A, Change to Upgrade Rule: Making"High Assurance" Requirement an Objective, 7/13/79. (5 pages)

4. Letter to All Nonpower Reactor Licensees from Robert W. Reid, with enclosure, 7/30/79. (7 pages)

5. Memo for L. V. Gossick from Samuel J. Chilk, "Discussion of SECY-79-189/A/B - Upgrade Rule," 8/3/79. (2 pages)

6. Memo for William J. Dircks from John C. Hoyle, "Staff Requirements" - 8/12/81. (3 pages)

7. ACRS Transcript - "Impact of the Safeguards Upgrade Rule on Nonpower Reactor Licensees," 8/27/79. (153 pages)

Pt 73

A-1

March 16, 1979

UNITED STATES
NUCLEAR REGULATORY COMMISSION

SECY-79-187

POLICY SESSION ITEM

For: The Commissioners

From: Robert B. Minogue, Director, SD
William J. Dircks, Director, NMSS

Thru: Executive Director for Operations

Subject: STRENGTHENED PHYSICAL PROTECTION REQUIREMENTS FOR FUEL CYCLE FACILITIES AND TRANSPORTATION INVOLVING FORMULA QUANTITIES OF STRATEGIC SPECIAL NUCLEAR MATERIAL (SHORT TITLE - SAFEGUARDS UPGRADE RULE)

Purpose: To obtain Commission approval to publish a final rule that would require strengthened physical protection safeguards systems for fuel cycle facilities and transportation involving formula quantities of strategic special nuclear material.

Category: This paper covers a major issue requiring Commission action.

Discussion:

Background:

On August 9, 1978, the Commission issued for public comment revised proposed amendments to 10 CFR Part 73 to upgrade physical protection safeguards systems for fuel cycle facilities and transportation involving formula quantities of strategic special nuclear material. Interested persons were given forty-five days to comment on the revised amendments. This was the second round of public comment. Proposed amendments were first published for comment in July 1977. A summary of the second round of comments and staff responses is included as Enclosure "B". Enclosure "A" consists of revised proposed amendments and a statement of considerations which explains the changes made as a result of the second round of public comment and other deliberations during the comment review period. The statement of considerations also discusses the reasons why some suggested changes were not made. There are eight proposed substantive changes and other less substantive changes of an editorial, clarifying or defining nature. The first three are considered particularly significant and result from the recommendations of the "Task Force on NRC Safeguards Policy" convened by Mr. Gossick. It should also be noted that two comprehensive guidance documents for this rule have been completed and issued for comment.

Changes:

X-Ref

The proposed substantive changes are as follows:

1. The general performance requirements of both existing §73.55(a), for power reactors, and proposed §73.20(a), for facilities

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~~9905080082~~
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and transport activities possessing formula quantities of SSNM, have been modified to delete reference to "high assurance" protection and to substitute "reasonable assurance" that activities involving SNM are not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety.

2. The existing design basis threat stated in §73.55(a) for power reactors has been modified and is now referenced as a general radiological sabotage statement which is also applicable to other facility types as required.

3. The proposed design basis threat contained in §73.20(a) for facilities processing formula quantities of strategic special nuclear material and for transport of such material has been modified and is now referenced as a general theft or diversion of formula quantities of SSNM statement which could be applicable to other facility types as well. The result is that design basis threats are now referenced to acts to be protected against, rather than to specific facility types.

4. The submission and implementation schedules have been changed to allow licensees to meet the amended requirements with a single submission and implementation period for all aspects of the design basis threat referenced by the general performance requirements of § 73.20(a). The published proposal called for two submissions to give licensees time to develop plans to protect against collusion and to give staff time to develop guidance. This is no longer necessary because of the early completion of the collusion guidance. Submission time has been changed to 150 days after the effective date of these amendments, while implementation time has been changed to 360 days. The allowable time to complete new construction or significant physical modification of existing structures or major equipment remains the same.

5. The number of armed escorts required to protect the road and rail transportation and transfer of SSNM has been changed from nine to seven. A reevaluation of the minimum number necessary concluded that the intended functions could be met by two less individuals, thus saving the industry a degree of labor expense. In the staff's judgment, this change will not diminish the degree of protection provided shipments of SSNM. This would provide comparability with DOE safeguards for SSNM shipments.

6. The requirement for use of penetration-resistant containers has been deleted as there was considerable question concerning the availability of and need for penetration-resistant containers.

7. The requirement for closed circuit television monitoring of unoccupied vaults or process areas containing unalloyed or unencapsulated SSNM by a continuously manned onsite location in addition to the two alarm stations has been changed. The intent of this requirement can be better met by stating that means shall be used which require that an individual other than either alarm station operator be present at or have knowledge of the opening of such vaults or process areas.

8. The definition of vault has been changed to reflect a more general description. Specific delay characteristics have been added to §73.46.

Other comments which resulted in clarifying or definition changes of a less substantive nature are discussed in the statement of considerations in Enclosure "A" and in staff response to comments in Enclosure "B".

Other Comments:

1. Commenters continued to question the threat statement and justification for the amended requirements. Such concern was not based on new arguments, and some modifications have been made. Nevertheless, much of the justification has been restated in Enclosure "A".

2. Commenters noted that a comprehensive evaluation of the amended regulations was dependent upon the nature of the design guidance to be furnished and that effective publication of the amendments should be delayed pending comment on such guidance. A comment period for the guidance should be adequate for providing such additional evaluation. Staff does not believe a third comment period for the revised amendments is desirable or necessary.

3. Costs - Additional general comments that the amendments would prove too costly were made; however, no details were given nor were specific criticisms of the previously prepared value impact statement made. The changes proposed for final publication would provide a small decrease in the overall cost while providing some increase in the value of the proposed upgraded physical protection system. The changes have not

been such as to require revision of the value impact prepared for the proposed amendments published in August 1978. There are license fee costs which the licensees would be required to pay for the review and approval of their revised physical protection plans. These were not noted in the original value impact analysis because the regulation requiring them had not been promulgated at that time. These fees would amount to about $108,000 for the total industry or an average of about $8,300 per licensee. The fees are discussed in more detail in a revised Report Justification Analysis included as Enclosure "C".

Other Safeguards Actions

IAEA Category II and III Material Protection Rule	Effective Rule submitted to Commission in January 1979
Material Access Authorization Program	Pending recommendation of Hearing Board and Commission decision estimated April 1979
Non-power Reactor Protection Rule	Proposed rule in preparation

The Category II and III rule adds a new section to Part 73 and covers many of the materials and facilities not covered in the proposed upgrade rule.

The upgrade rule depends on the material access authorization program to the extent that such access authorizations provide a measure of protection against the insider. The upgrade rule specifically refers to material access authorizations in its treatment of search requirements and in its treatment of conspiracy between insiders. The rule also limits unescorted access to vital areas, material access areas, and controlled access areas to individuals having an NRC or DOE material access authorization. Until such a program is implemented by the NRC, some licensees may have to employ escort procedures for such areas.

The non-power reactor protection rule will eventually cover non-power reactor protection (exclude them from the proposed requirements of the safeguards upgrade rule and the Category II and III rule). If and until such a rule becomes effective, requirements of the safeguards upgrade and Category II and III rules would apply depending on the quantity of materials involved.

These separate rulemaking actions are being coordinated to ensure need and consistency.

Issues and Alternatives

The major issue after two rounds of public comment and response and accelerated preparation of necessary guidance documentation is whether to further delay publication of effective amendments pending public comment upon the guidance documentation recently prepared. After two rounds of public comment and the associated staff deliberations thereof, there is little, if any, substantive information that could be expected to be gained from another round of public comment on the amendments themselves. However, for the public to be able to effectively comment on the guidance to be issued, they should have the final regulations available to put the guidance in its proper context. The staff, therefore, is recommending that the proposed amendments be published in final form but that the effective date be far enough advanced so that the comments on the guidance can be received and final guidance be published when the amendments become effective. The guidance is being published for a 60-day comment period. In addition, the staff will hold a meeting to brief licensees and other interested parties on the guidance and to answer questions concerning it. Staff has estimated that another 60 days will be needed to revise the guidance based on comments. The effective date of the amendments has, therefore, been recommended as 120 days after publication in the Federal Register. Considering the large volume of guidance documents being published, this 120 days for comment and revision is a minimum.

Recommendations: That the Commission:

1. Approve for publication in effective form revised proposed amendments to 10 CFR Part 73 as contained in Enclosure "A."

2. Note that the value/impact analysis previously placed in the Public Document Room has been reviewed and determined to still be valid for the revised amendments except for the Report Justification Analysis which has been revised (Enclosure "C").

3. Note that a public announcement such as Enclosure "D" will be issued when the proposed amendments are filed with the Office of the Federal Register.

4. Note that the appropriate Congressional Committees will be notified of this action.

5. Note that the Environmental Impact Appraisal, supporting a Negative Declaration, as prepared for the original proposed rule and placed in the Public Document Room, is still applicable.

Coordination: The Offices of Nuclear Reactor Regulation, Inspection and Enforcement, and International Programs concur in the recommendations of this paper. The Office of the Executive Legal Director has no legal objection to the recommendations of this paper. The Office of Public Affairs prepared the draft public announcement.

Scheduling: For consideration at an early policy session.

Sunshine Act Recommendation: It is recommended that this paper be considered in an open meeting. The Executive Director for Operations concurs in this recommendation.

Robert B. Minogue

Robert B. Minogue, Director
Office of Standards Development

William J. Dircks

William J. Dircks, Director
Office of Nuclear Material Safety
and Safeguards

Enclosures: -mBP
"A" - Federal Register Notice
"B" - Summary of and Response to Comments
"C" - Report Justification Analysis
"D" - Public Announcement

This paper will be scheduled for consideration, in conjunction with SECY-79-188, at an Open (Portions may be closed) Meeting in the near future. Please refer to the appropriate Weekly Commission Schedule, when published, for a specific date and time.

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P&LC Secy-79-157, 3/14/79

ENCLOSURE A

[7590-01]

ENCLOSURE "A"

NUCLEAR REGULATORY COMMISSION

[ ] CFR PARTS 70 AND 73]

PHYSICAL PROTECTION OF PLANTS AND MATERIALS

AGENCY: U.S. Nuclear Regulatory Commission

ACTION: Final Rule

SUMMARY: In July 1977, the Commission published for public comment proposed amendments to its regulations for strengthened physical protection for strategic special nuclear material, certain fuel cycle facilities, transportation and other activities involving significant quantities of strategic special nuclear material. Extensive comments were received and a revision of the proposed amendments was published in August 1978 requesting public comment on the changes made.

In response to public comments, some additional changes have been made to the proposed amendments. The Nuclear Regulatory Commission now is publishing these revised amendments in final form.

[~~Concurrently,~~ t]The NRC [~~is~~] has issu[~~ing~~]ed* for public comment guidance documentation to assist the licensee in the development of safeguards physical protection and transportation protection plans and the implementation of such plans required by the amendments. The effective date of the revised requirements has been set to permit

*Comparative text to the regulations published for public comment. Deletions are lined through and additions underscored.

public comment on the guidance and its issuance in final form at the time the requirements become effective.

EFFECTIVE DATE: 120 days after publication in FR.

NOTE: The Nuclear Regulatory Commission has submitted this rule to the Comptroller General for review of its reporting requirement under the Federal Reports Act, as amended, 44 U.S.C. 3512. The date on which the reporting requirement of the rule becomes effective, unless advised to the contrary, includes a 45-day period which that statute allows for for Comptroller General review (44 U.S.C. 3512(c(2)).

FOR FURTHER INFORMATION CONTACT: Mr. L. J. Evans, Jr., Chief, Requirements Analysis Branch, Division of Safeguards, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, 301-427-4181, or Mr. R. J. Jones, Chief, Safeguards Standards Branch, Division of Siting, Health and Safeguards Standards, Office of Standards Development, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, 301-443-5907.

SUPPLEMENTARY INFORMATION: On July 5, 1977, the Nuclear Regulatory Commission published in the FEDERAL REGISTER (42 FR 34310) proposed amendments to 10 CFR Part 73 of its regulations. Interested persons were invited to submit written comments and suggestions in connection with the proposed amendments within 45 days after publication in the FEDERAL REGISTER. The comment period was subsequently extended thirty days. Upon consideration of the comments received on the

proposed amendments published on July 5, 1977 and upon consideration of other factors involved, the Nuclear Regulatory Commission published revised proposed amendments on August 9, 1978 in the FEDERAL REGISTER (43 FR 35321) to obtain further public comment on the changes that had been made to the proposed amendments.

Significant differences from the original proposed amendments published for comment on July 5, 1977 were: (1) the definition of the conspiracy threat was changed to a conspiracy between individuals in any position who may have access to and detailed knowledge of the facilities and activities referred to in 73.20(a) or items that could facilitate theft of special nuclear material or both; (2) export/import requirements were revised to reflect the jurisdictional aspects of the regulation; (3) the phrase "...but not necessarily limited to..." was deleted from the general performance requirements and capability requirements; (4) the package search requirements were changed so that packages carried into a protected area by persons having access authorization need only be searched when that person is chosen for random search. The package search requirement also was changed to require only random search of packages delivered into a protected area; (5) the Contingency and Response plan requirements for in-transit protection was revised to add more detailed response requirements consistent with the fixed site requirements; (6) the requirement for three armed escorts on cargo aircraft and for sea shipments was changed to two, (7) the requirement for Pu and U-233 containers resistant to small arms fire was deleted; (8) the

export/import security plan approval requirement was changed to apply to all shipments and was clarified as to timing; (9) the requirement for alarm stations to be considered vital areas was changed; (10) the use of vault type rooms for storage of strategic special nuclear material directly useable in a nuclear explosive device was prohibited and the definition of vault changed to better reflect the purpose of vaults; (11) the word immediately was deleted from the requirement that armed response personnel be immediately available; (12) definitions were added for deceit, stealth, and force, and other changes in wording and language were made throughout the rule to clarify the intent and be more specific in the meaning of the requirements; (13) obsolete sections to be deleted when the effective rule is published were noted; and (14) planning and implementation times were changed.

After review of the latest round of comments, the following substantive changes have been made: (1) the definition of vault has been further revised [~~to account for the response time of on site security forces; and also to reflect the significance of the detection and communication aspects of the site security system in determining both response time of security forces and penetration delay time required of the vault;~~] and required vault attributes have been added to § 73.46(c)(5)(i); (2) the number of armed escorts required for transfer, rail and road transportation of domestic shipments of SSNM has been reduced from nine to seven individuals; (3) the requirement for "penetration resistant" tamper-indicating containers for storage

of certain SSNM has been changed to tamper indicating containers; (4) the requirement for a third closed circuit television monitor of vaults has been changed; (5) a definition has been added for "undergoing processing;" [and] (6) planning and implementation times have been changed; (7) the design basis threat relating to theft of strategic special nuclear material has been modified and moved to § 73.1(a); (8) the design basis threat statement relating to radiological sabotage (present § 73.55) has been modified and moved to § 73.1(a); and (9) the phrase "reasonable assurance" replaces the phrase "high assurance" in describing protection levels. In addition, changes in wording and language have been made throughout the rule for clarification, and conforming changes in references to and by existing sections have been made.

The following discussion pertains to items (1) through (9) above.

(1) Commenters noted that the definition of vault, while attempting to specify a delay capability tied to the response time of LLEA, failed to account for the significance of other aspects of the security system, such as intrusion detection and communication, in determining that response time. Additionally, the use of LLEA response time as the criterion for measuring vault delay time was criticized as being impractical and ignoring the protection afforded by response of the armed onsite security force. Accordingly, the definition has been changed [~~to account for these factors~~] and an

additional discussion of required vault attributes has been added to § 73.46.

(2) In determining a specific number of armed escorts for domestic transfers, rail, and road shipments, the basic principles were that force size be large enough to engage a small group of attackers and delay theft and that this force would always be composed of two distinct separated groups, so that no single act which interrupted communications of one group would totally destroy the ability to communicate to the movement control center. The Commission, in reviewing the differences in performance that could be expected from different group sizes, determined that seven armed individuals could provide the necessary protection while lessening labor expense. The rule has been changed accordingly.

(3) Comments questioned whether a "penetration resistant" tamper-indicating container was adequately defined, available, or even necessary. As the meaning of penetration resistant was not clear, availability of containers was not certain, and the need for such containers was not defined, the rule was changed to delete the terms "penetration resistant."

(4) Commenters stated that requiring a third continuously manned location to monitor closed circuit television was equivalent to requiring a third alarm station. The intent of this provision was to add a third factor to protect against collusion between the two alarm station operators. After review, the Commission has

determined that this factor could be provided without the specific requirements of a third CCTV monitor. The rule has been changed accordingly.

(5) Commenters expressed confusion as to when protection requirements were required while SSNM is undergoing processing. A definition has been added to § 73.2 to define undergoing processing and to clarify the distinction between such processing and storage for application of protection requirements.

(6) The implementation schedule has been simplified. There is now one schedule required for planning and implementing a revised security program, rather than separate schedules for the external threat plan and internal conspiracy plan as previously proposed. The prior two schedule approach was to permit time for development of guidance for protection against the internal conspiracy. This guidance has now been developed so that a schedule delay is not necessary.

(7) Based upon review of the design basis threat, the previous threat description stated as a general performance requirement in § 73.20(a) has been modified to reflect a reference to the malevolent act of concern (theft or diversion) rather than a reference to the type of facility to be protected and has been moved to § 73.1. Appropriate reference changes have been made accordingly.

(8) The existing design basis threat stated in §73.55(a) for nuclear power reactors has also been modified as in (7) above to be

referenced to the radiological sabotage threat rather than to the facility to be protected and has been moved to § 73.1. Appropriate reference changes have been made accordingly.

(9) The term "high assurance", as used to describe required protection levels in the general performance requirements of both existing § 73.55(a) for power reactors, and proposed § 73.20(a) for facilities and transport activities processing formula quantities of SSNM, has been deleted. Both general performance requirements now require a physical protection system which "will provide reasonable assurance that activities involving special nuclear material are not inimical to the common defense and security, and do not constitute an unreasonable risk to the public health and safety." This change will improve consistency with existing reactor health and safety terminology, as contained in existing regulations. It is important to note that this change will not affect the Commission's judgments of what regulatory requirements are necessary to assure provision of adequate safeguards against radiological sabotage, theft or diversion. Regardless of which modifier is used, the Commission is still obliged by law to assure that licensed activities do not pose an unreasonable risk to the health and safety of the public and are not inimical to the common defense and security.

In adopting these amendments, the Commission decided that the requirements should not be made effective until guidance had been published assisting licensees in conforming to performance-oriented

physical protection requirements for affected facilities and activities. Allowance for consideration of public comments on this guidance has been built into the time period specifying the effective date of the amendments. [~~Concurrent with~~] Prior to the publication of these amendments, two guidance documents [~~are being~~] have been published for public comment. These are: (1) "Fixed Site Physical Protection Upgrade Rule Guidance Compendium, Volumes I and II" and (2) Regulatory Guide 5.(SG904-4), "Standard Format and Content, Physical Protection of Strategic Special Nuclear Material In Transit."

In addition, revisions to Regulatory Guides 5.7, "Exit/Entry Control to Protected Areas, Vital Areas, and Material Access Areas," 5.14, "The Use of Observation (Visual Surveillance) Techniques in Material Access Areas," 5.44, "Perimeter Alarm Systems," and 5.57, "Shipping and Receiving Control of Special Nuclear Material," have been made. These documents also [~~will be~~] have been published for comment.

Copies of these new and revised guidance documents are being sent to persons who have expressed an interest in this matter. Comments are being requested by (60 days after publication) so that final guidance can be published by the time the rule becomes effective on (120 days after publication). Copies of these documents also will be placed in the Commission's Public Document Room at 1717 H Street, NW., Washington, D.C.

The Commission believes that a significant number of comments for which no changes to the amendments were made will be satisfactorily addressed by this guidance documentation to be published concurrently with these amendments.

In addition to the comments that resulted in changes in the proposed amendments, the threat and general performance requirements were again questioned. The Commmssion believes it is worth restating the purpose and intent of the threat characterization and its relationship to the general performance requirements.

The purpose of the threat defined in the proposed amendments is to define the general character of the domestic safeguards challenge. It is intended to provide a design basis for physical protection systems; therefore, additional adversary attributes are not necessary to serve this purpose. Physical protection systems, when designed to the level specified in the general performance sections of the rule and in accordance with the reference system specified in the rule and other design guidance to be provided, will be responsive to a general range of threats characterized by that stated in the amendments.

With respect to specific numbers of adversaries, the numbers are not as significant as are the capabilities and resources of the adversary. For example, the threat from a disorganized mob of fifty or so people is much different from that of only a few well-organized, well-trained people.

Given that the described threat is a design basis for a physical protection system, additional design criteria are given in the form of required system capabilities. These capabilities are further supported by the subsystems and components of the reference systems in the regulations designed to meet the general performance requirements and required capabilities.

The Commission has determined under Council of Environmental Quality guidelines and the criteria in 10 CFR Part 51 that an environmental impact statement for the amendments to 10 CFR Part 73 is not required. Concurrently with publication of the notice of proposed rulemaking of July 5, 1977 (42 FR 34310), the Commission made available in its Public Document Room at 1717 H Street NW., Washington, D.C., an "Environmental Impact Appraisal of Amendments to 10 CFR Part 73" to support a Negative Declaration. This document is appropriate for the revised amendments as well.

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and sections 552 and 553 of title 5 of the United States Code, notice is hereby given that the following amendments to Title 10, Chapter 1, Code of Federal Regulations, Parts 70 and 73, are published as a document subject to codification.

1. Paragraph 73.1(a) of 10 CFR Part 73 is revised to read as follows:

§ 73.1 Purpose and scope.

(a) Purpose. This part prescribes requirements for the establishment and maintenance of a physical protection system which will have capabilities for the protection of special nuclear material at fixed sites and in transit and of plants in which special nuclear material is used[;]. The following design basis threats, where referenced in ensuing sections of this part, shall be used to design protection systems to protect against acts of radiological sabotage and to prevent the theft of special nuclear material:

(1) Radiological Sabotage.

(i) A determined violent external assault, attack by stealth, or deceptive actions, of several persons with the following attributes, assistance and equipment: (A) well-trained (including military training and skills) and dedicated individuals, (B) inside assistance which may include a knowledgeable individual who attempts to participate in both a passive role (e.g., provide information) and an active role (e.g., facilitate entrance and exit, disable alarms and communications, participate in violent attack), (C) suitable weapons, up to and including hand-held automatic weapons, equipped with silencers and having effective long range accuracy, (D) hand-carried equipment, including incapacitating agents and explosives for use as tools of entry or for otherwise destroying reactor, facility, transporter, or container integrity or features of the safeguards system, and

(ii) an internal threat of an insider, including an employee (in any position).

(2) Theft or Diversion of Formula Quantities of Strategic Special Nuclear Material

(i) A determined external assault, attack by stealth, or deceptive actions, by a small group with the following attributes, assistance and equipment: (A) well-trained (including military training and skills) and dedicated individuals, (B) inside assistance which may include a knowledgeable individual who attempts to participate in both a passive role (e.g., provide information) and an active role (e.g., facilitate entrance and exit, disable alarms and communications, participate in violent attack,) (C) suitable weapons, up to and including hand-held automatic weapons, equipped with silencers and having effective long range accuracy, (D) hand-carried equipment, including incapacitating agents and explosives for use as tools of entry or for otherwise destroying reactor, facility, transporter or container integrity or features of the safeguards system, and (E) the ability to operate as two or more teams,

(ii) An individual, including an employee (in any position), and

(iii) A conspiracy between individuals in any position who may have: (A) access to and detailed knowledge of nuclear power plants or the facilities referred to in 73.20(a), or (B) items that could facilitate theft of special nuclear material (e.g., small tools, substitute material, false documents, etc.), or both.

2. Paragraphs 73.2(c), (f), (h), (k), (n), and (p) of 10 CFR Part 73 are revised to read as follows:

§ 73.2 Definitions

As used in this part:

* * * * *

(c) "Guard" means a uniformed individual armed with a firearm whose primary duty is the protection of special nuclear material against theft, the protection of a plant against radiological sabotage, or both.

* * * * *

(f) "Physical barrier" means

(1) Fences constructed of No. 11 American wire gauge, or heavier wire fabric, topped by three strands or more of barbed wire or similar material on brackets angled outward between 30° and 45° from the vertical, with an overall height of not less than eight feet, including the barbed topping;

(2) Building walls, ceilings and floors constructed of stone, brick, cinder block, concrete, steel or comparable materials (openings in which are secured by grates, doors, or covers of construction and fastening of sufficient strength such that the integrity of the wall is not lessened by any opening), or walls of similar construction, not part of a building, provided with a barbed topping described in

paragraph (f)(1) of this section of a height of not less than 8 feet; or

(3) Any other physical obstruction constructed in a manner and of materials suitable for the purpose for which the obstruction is intended.

* * * * *

(h) "Vital area" means any area which contains vital equipment.

* * * * *

(k) "Isolation zone" means any area, clear of all objects which could conceal or shield an individual, adjacent to a physical barrier.

* * * * *

(n) "Vault" means a windowless enclosure [constructed] with walls, floor, roof and door(s) [~~that will delay penetration appropriate to the response time of the local law enforcement authority that would respond to a safeguards contingency at the site~~:] designed and constructed to delay penetration from forced entry.

* * * * *

(p) "Radiological sabotage" means any deliberate act directed against a plant or transport in which an activity licensed pursuant to the regulations in this chapter is conducted, or against a component of such a plant or transport which could directly or indirectly endanger the public health and safety by exposure to radiation.

3. Section 73.2 of 10 CFR Part 73 is amended to add paragraphs (z) thru (ii).

§ 73.2 Definitions.

As used in this part:

* * * * *

(z) "Controlled access area" means any temporarily or permanently established clearly demarcated area, access to which is controlled and which affords isolation of the material, equipment or persons within it.

(aa) "Strategic special nuclear material" means uranium-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope), uranium-233, or plutonium.

(bb) "Formula quantity" means strategic special nuclear material in any combination in a quantity of 5,000 grams or more computed by the formula, grams = (grams contained U-235) + 2.5 (grams U-233 + grams plutonium).

(cc) "Transport" means any land, sea, or air conveyance or modules for these conveyances such as rail cars or standardized cargo containers.

(dd) "Incendiary device" means any self-contained device intended to create an intense fire that can damage normally flame-resistant or retardant materials.

(ee) "Movement control center" means an operations center which is remote from transport activity and which maintains periodic

position information on the movement of strategic special nuclear material, receives reports of attempted attacks or thefts, provides a means for reporting these and other problems to appropriate agencies and can request and coordinate appropriate aid.

(ff) "Force" means [potentially] violent methods used by an adversary to attempt to [gain unauthorized access or introduce unauthorized materials into or remove strategic special nuclear material from protected areas; vital areas; material access areas; controlled access areas; or transports;] steal strategic special nuclear material or sabotage a nuclear facility or violent methods used by response personnel to protect against such adversary actions.

(gg) "Stealth" means [covert] methods used to attempt to gain unauthorized access, [or] introduce [or remove] unauthorized materials, or remove strategic special nuclear material, where the fact of such attempt is concealed or an attempt is made to conceal it.

(hh) "Deceit" means methods used to attempt to gain unauthorized access, [or] introduce [or remove] unauthorized materials, or remove strategic special nuclear materials, where the attempt involves falsification to present the appearance of authorized access.

(ii) "Undergoing processing" means performing active operations on material such as chemical transformation, enrichment, physical transformation, or transit between such operations, to be differentiated from storage or packaging for shipment.

4. The undesignated first paragraph of section 73.6 is revised to read as follows:

§ 73.6 Exemptions of certain quantities and kinds of special nuclear material.

A licensee is exempt from the requirements of §§ 73.20, 73.24 73.25, 73.26, 73.27, 73.45, 73.46, 73.70 and 73.72 of this part, with respect to the following special nuclear material:

* * * * *

5. Section 73.6 is amended to add paragraph (d) to read as follows:

§ 73.6 Exemptions of certain quantities and kinds of special nuclear material.

* * * * *

(d) Special nuclear material that is being transported by the United States Department of Energy transport system.

6. Sections 73.30 through 73.36; and 73.60 are deleted.

7. The undesignated first paragraph of Section 73.50 is revised to read as follows:

§ 73.50 Requirements for physical protection of licensed activities.

Each licensee who [~~is authorized to~~] possesses, uses, or stores formula quantities of strategic special nuclear material which is not readily separable from other radioactive material and which has a total external radiation dose rate in excess of 100 rems per hour at a distance of 3 feet from any accessible surface without intervening

shielding other than at a nuclear reactor facility licensed pursuant to Part 50 of this chapter shall comply with the following:

* * * * *

8. Paragraph 73.40(a) is revised to read as follows:

§ 73.40 Physical protection: General requirements at fixed sites.

(a) Each licensee shall provide physical protection against ~~[industrial]~~ radiological sabotage and against theft of special nuclear material at the fixed sites where licensed activities are conducted. Physical security systems shall be established and maintained by the licensee in accordance with security plans approved by the Nuclear Regulatory Commission.

9. Paragraph 73.40(b) is revised to replace references to §§ 73.50 and 73.60 with references to §§ 73.20; 73.24; 73.25; 73.26; 73.45; and 73.46.

10. New sections 73.20, 73.24; 73.25, 73.26, 73.27, 73.45 and 73.46 are added to read as follows:

§ 73.20 General Performance Requirements.

(a) In addition to any other requirements of this part, each licensee who is authorized to operate a fuel reprocessing plant pursuant to Part 50 of this chapter; possesses or uses formula quantities of strategic special nuclear material at any site or contiguous sites subject to control by the licensee; is authorized to transport or deliver to a carrier for transportation pursuant to

Part 70 of this chapter formula quantities of strategic special nuclear material; takes delivery of formula quantities of strategic special nuclear material free on board (f.o.b.) the point at which it is delivered to a carrier for transportation; or imports or exports formula quantities of strategic special nuclear material, shall establish and maintain or make arrangements for a physical protection system which will provide reasonable assurance that activities involving special nuclear material are not inimical to the common defense and security, and do not constitute an unreasonable risk to the public health and safety. The physical protection system shall be designed to protect against the design basis threats of theft or diversion of strategic special nuclear material and radiological sabotage as stated in § 73.1(a).

(b) To meet the general performance requirements of paragraph (a) of this section a licensee shall establish and maintain, or arrange for, a physical protection system that:

(1) provides the performance capabilities described in section 73.25 for in-transit protection or in Section 73.45 for fixed site protection unless otherwise authorized by the Commission;

(2) is designed with sufficient redundancy and diversity to assure maintenance of the capabilities described in section 73.25 or 73.45; and

(3) includes a testing and maintenance program to assure control over all activities and devices affecting the effectiveness, reliability, and availability of the physical protection system, including a

demonstration that any defects of such activities and devices will be promptly detected and corrected for the total period of time they are required as a part of the physical protection system.

(c) Each licensee subject to the requirements of paragraphs (a) and (b) of this section shall:

(1) within [~~120~~] 150 days after the effective date of these amendments, submit a revised fixed site safeguards physical protection plan and, if appropriate, a revised safeguards transportation protection plan describing how the licensee will comply with the requirements of paragraph[~~s~~] (a)[~~(1) and (a)(2)~~] of this section; and

(2) within [~~300~~] 360 days after the effective date of these amendments or 90 days after the plan submitted pursuant to paragraph (c)(1) of this section is approved, whichever is later, implement the approved plan except for activities specifically identified by the licensee which involve new construction, significant physical modification of existing structures or major equipment installation for which 540 days after the effective date of these amendments or 180 days after the plan(s) is approved, whichever is later, will be allowed.

[~~(3) within 210 days after the effective date of these amendments submit a revised fixed site safeguards physical protection plan and, if appropriate, a revised safeguards transportation protection plan describing how the licensee will comply with the requirements of paragraph (a)(3) of this section; and~~

~~(4)--within-390-days-after-the-effective-date-of-these-amendments or-90-days-after-the-plan(s)-submitted-pursuant-to-paragraph-(c)(3) of-this-section-is-approved;-whichever-is-later;-implement-the approved-plan-except-for-activities-specifically-identified-by-the licensee-which-involve-new-construction;-significant-modification-of existing-structures-or-major-equipment-installation-for-which-540 days-after-the-effective-date-of-these-amendments-or-180-days-after the-plan(s)-is-approved;-whichever-is-later;-will-be-allowed:]~~

§ 73.24 Prohibitions.

(a) Except as specifically approved by the Nuclear Regulatory Commission, no shipment of special nuclear material shall be made in passenger aircraft in excess of (i) 20 grams or 20 curies, whichever is less, of plutonium or uranium-233, or (ii) 350 grams of uranium-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope).

(b) For any series of shipments of strategic special nuclear material by a licensee to the same or different consignee in which individual shipments are less than the quantities requiring physical protection in transit under 10 CFR 73.1(b)(2), but the total quantity for the series exceeds the formula quantity of strategic special nuclear material the licensee shall confirm and log the arrival, at the final destination, of each shipment in the series before releasing the subsequent shipment.

§ 73.25 Performance capabilities for physical protection of strategic special nuclear material in transit.

(a) To meet the general performance requirements of § 73.20 an in-transit physical protection system shall include the performance capabilities described in paragraphs (b) through (d) of this section unless otherwise authorized by the Commission.

(b) Restrict access to and activity in the vicinity of transports and strategic special nuclear material. To achieve this capability the physical protection system shall:

(1) Minimize the vulnerability of the strategic special nuclear material by using the following subfunctions and procedures:

(i) Preplanning itineraries for the movement of strategic special nuclear material;

(ii) Periodically updating knowledge of route conditions for the movement of strategic special nuclear material;

(iii) Maintaining knowledge of the status and position of the strategic special nuclear material en route; and

(iv) Determining and communicating alternative itineraries en route as conditions warrant.

(2) Detect and delay any unauthorized attempt to gain access or introduce unauthorized materials by stealth or force into the vicinity of transports [~~at all stops~~] and strategic special nuclear material using the following subsystems and subfunctions:

(i) Controlled access areas to isolate strategic special nuclear material [or] and transports [~~at all stops~~] to assure that unauthorized

persons [or materials] shall not have direct access to, and unauthorized materials shall not be introduced into the vicinity of, the transports [or] and strategic special nuclear material, and

(ii) Access detection subsystems and procedures to detect, assess and communicate any unauthorized penetration (or such attempts) of a controlled access area by persons, vehicles or materials [at the time of the penetration (or attempt)] so that the response [can prevent the penetration (or attempt) from resulting in the theft of strategic special nuclear material or radiological sabotage:] will satisfy the general performance requirements of § 73.20(a).

[(3) Detect and delay any unauthorized attempt to gain access by stealth or force into the vicinity of strategic special nuclear material on board moving transports using the following subsystems and subfunctions:]

[(i) Controlled access areas to assure unauthorized persons shall not have direct access to the strategic special nuclear material;

(ii) Secured cargo compartments; and

(iii) Monitoring and surveillance subsystems and procedures to detect, assess and communicate any unauthorized access into the vicinity of strategic special nuclear material or penetration of cargo compartments or controlled access areas (or such attempts) so that the response can prevent the theft of strategic special nuclear material:]

(3) Detect attempts to gain unauthorized access or introduce unauthorized materials into the vicinity of transports by deceit using the following subsystems and subfunctions:

(i) Access authorization controls and procedures to provide current authorization schedules and access criteria for persons, materials and vehicles; and

(ii) Access controls and procedures to verify the identity of persons, materials and vehicles and assess such identity against current authorization schedules and access criteria before permitting access and to initiate response measures to deny unauthorized entries.

(c) Prevent or delay unauthorized entry or introduction of unauthorized materials into, and unauthorized removal of, strategic special nuclear material from transports. To achieve this capability the physical protection system shall:

(1) Detect attempts to gain unauthorized entry or introduce unauthorized materials into transports by deceit using the following subsystems and subfunctions:

(i) Access authorization controls and procedures to provide current authorization schedules and entry criteria for access into transports for both persons and materials; and

(ii) Entry controls and procedures to verify the identity of persons and materials and to permit transport entry only to those persons and materials specified by the current authorization schedules and entry criteria.

(2) Detect attempts to gain unauthorized entry or introduce unauthorized material into transports by stealth or force using the following subsystems and subfunctions:

(i) Transport features to delay access to strategic special nuclear material sufficient to permit the detection and response systems to function so as to [~~prevent the theft of strategic special nuclear material;~~] satisfy the general performance requirements of § 73.20(a);

(ii) Inspection and detection subsystems and procedures to detect unauthorized tampering with transports and cargo containers; and

(iii) Surveillance subsystems and procedures to detect, assess and communicate any unauthorized presence of persons or materials and any unauthorized attempt to penetrate the transport so that the response [~~can prevent the theft of strategic special nuclear material~~] will satisfy the general performance requirements of § 73.20(a).

(3) Prevent unauthorized removal of strategic special nuclear material from transports by deceit using the following subsystems and subfunctions:

(i) Authorization controls and procedures to provide current schedules for authorized removal of strategic special nuclear material which specify the persons authorized to remove and receive the material, the authorized times for such removal and receipt and authorized places for such removal and receipt.

(ii) Removal controls and procedures to establish [~~removal procedures~~] activities for transferring cargo in emergency situations; and

(iii) Removal controls and procedures to permit removal of strategic special nuclear material only after verification of the identity of persons removing or receiving the strategic special nuclear material, and the identity and integrity of the strategic special nuclear material being removed from transports.

(4) Detect attempts to remove strategic special nuclear material from transports by stealth or force using the following subsystems and subfunctions:

(i) Transport features to delay unauthorized strategic special nuclear material removal attempts sufficient to assist detection and permit a response to [~~prevent the theft of strategic special nuclear material~~] satisfy the general performance requirements of § 73.20(a); and

(ii) Detection subsystems and procedures to detect, assess and communicate any attempts at unauthorized removal of strategic special nuclear material so that response to the attempt can be such as to [~~prevent the removal theft of strategic special nuclear material~~] satisfy the general performance requirements of § 73.20(a).

(d) Respond to safeguards contingencies and emergencies to assure that the two capabilities (b) and (c) of this section are achieved, and to engage and impede adversary forces until local law

enforcement forces arrive. To achieve this capability, the physical protection system shall:

(1) Respond rapidly and effectively to safeguards contingencies and emergencies using the following subsystems and subfunctions:

(i) A security organization composed of trained and qualified personnel, including armed escorts, one of whom is designated as escort commander, with procedures for command and control, to execute response functions.

(ii) Assessment procedures to assess the nature and extent of security related incidents.

(iii) A predetermined plan to respond to safeguards contingency events.

(iv) Equipment and procedures to enable responses to security related incidents sufficiently rapid and effective to achieve the predetermined objective of each action.

(v) Equipment, vehicle design features, and procedures to protect security organization personnel, including those at the movement control center, in their performance of assessment and response related functions.

(2) Transmit detection, assessment and other response related information using the following subsystems and subfunctions:

(i) Communications equipment and procedures to rapidly and accurately transmit security information among armed escorts.

(ii) Equipment and procedures for two-way communcations between the escort commander and the movement control center to

rapidly and accurately transmit assessment information and requests for assistance by local law enforcement forces, and to coordinate such assistance.

(iii) Communications equipment and procedures for the armed escorts and the movement control center personnel to notify local law enforcement forces of the need for assistance.

(3) Establish liaisons with local law enforcement authorities to arrange for assistance en route.

(4) Assure that a single adversary action cannot destroy the capability of armed escorts to notify the local law enforcement forces of the need for assistance.

§ 73.26 Transportation Physical Protection Systems, Subsystems, [~~Elements~~;] Components, and Procedures.

(a) A transportation physical protection system established pursuant to the general performance requirements of § 73.20 and performance capability requirements of § 73.25 of this part shall include, but are not necessarily limited to, the measures specified in paragraphs (b) through (l) of this section. The Commission may require, depending on the individual transportation conditions or circumstances, alternate or additional measures deemed necessary to meet the general performance requirements of § 73.20 of this part. The Commission also may authorize protection measures other than those required by this section if, in its opinion, the overall level

of performance meets the general performance requirements of § 73.20 and the performance capability requirements of § 73.25 of this part.

(b) Planning and Scheduling.

(1) Shipments shall be scheduled to avoid regular patterns and preplanned to avoid areas of natural disaster or civil disorders, such as strikes or riots. Such shipments shall be planned in order to avoid storage times in excess of 24 hours and to assure that deliveries occur at a time when the receiver at the final delivery point is present to accept the shipment.

(2) Arrangements shall be made with law enforcement authorities along the route of shipments for their response to an emergency or a call for assistance.

(3) Security arrangements for each shipment shall be approved by the Nuclear Regulatory Commission prior to the time for the seven-day notice required by § 73.72. Information to be supplied to the Commission in addition to the general security plan information is as follows:

(i) Shipper, consignee, carriers, transfer points, modes of shipment,

(ii) Point where escorts will relinquish responsibility or will accept responsibility for the shipment,

(iii) Arrangements made for transfer of shipment security, and

(iv) Security arrangements at point where escorts accept responsibility for an import shipment.

(4) Hand-to-hand receipts shall be completed at origin and destination and at all points enroute where there is a transfer of custody.

(c) Export/Import Shipments

(1) A licensee who imports a formula quantity of strategic special nuclear material shall make arrangements to assure that the material will be protected in transit as follows:

(i) An individual designated by the licensee or his agent, or as specified by a contract of carriage, shall confirm the container count and examine locks and/or seals for evidence of tampering, at the first place in the United States at which the shipment is discharged from the arriving carrier.

(ii) The shipment shall be protected at all times within the geographical limits of the United States as provided in this section and §§ 73.25 and 73.27.

(2) A licensee who exports a formula quantity of strategic special nuclear material shall comply with the requirements of this section and §§ 73.25 and 73.27, as applicable, up to the first point where the shipment is taken off the transport outside the United States.

(d) Security Organization.

(1) The licensee or his agent shall establish a transportation security organization, including armed escorts, armed response personnel or guards, and a movement control center manned and equipped to monitor and control shipments, to communicate with local law

enforcement authorities, and to respond to safeguards contingencies. All individuals engaged in the protection of a shipment, including armed escorts, armed response personnel, employees of the licensee or his agent who accompany the shipment, and the operators in the movement control center shall have an NRC or DOE [~~material~~] access authorization.[1/]

(2) At least one full time member of the security organization who has the authority to direct the physical protection activities of the security organization shall be on duty at the movement control center during the course of any shipment.

(3) The licensee or his agent shall establish, maintain, and follow a management system to provide for the development, revision, implementation, and enforcement of transportation physical protection procedures. The system shall include:

(i) Written security procedures which document the structure of the transportation security organization and which detail the duties of drivers and escorts and other individuals responsible for security; and

(ii) Provision for written approval of such procedures and any revisions thereto by the individual with overall responsibility for the security function.

1/ Proposed amendments requiring an NRC material access authorization program for licensee access to or control over special nuclear material (SECY-76-508) were published as a proposed rule on March 17, 1977 (42 FR 14880) and were discussed in a public hearing on July 10, 11, and 12, 1978.

(4) Neither the licensee or his agent shall permit an individual to act as an escort or other security organization member unless such individual has been trained, equipped, and qualified to perform each assigned security job duty in accordance with Appendix B, of this part, "General Criteria for Security Personnel." [~~to be published soon as an effective rule~~] Upon the request of an authorized representative of the Commission the licensee or his agent shall demonstrate the ability of the physical security personnel to carry out their assigned duties and responsibilities. Armed escorts shall requalify in accordance with Appendix B of this part at least every 12 months. Such requalification shall be documented.

(e) Contingency and Response Plans and Procedures.

(1) The licensee or his agent shall establish, maintain, and follow a safeguards contingency plan for dealing with threats, thefts, and radiological sabotage related to strategic special nuclear material in transit subject to the provisions of this section. Such safeguards contingency plan shall be in accordance with the criteria in Appendix C to this part, "Licensee Safeguards Contingency Plan" (43 FR 11962).

(2) Upon detection of abnormal presence or activity of persons or vehicles attempting to penetrate a moving convoy or persons attempting to gain access to a parked cargo vehicle or upon evidence or indication of penetration of the cargo vehicle the armed escorts or other armed response personnel shall:

(i) Determine whether or not a threat exists;

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

(iii) Take immediate concurrent measures to neutralize the threat by:

(a) Making the necessary tactical moves to prevent or impede acts of radiological sabotage or theft of strategic special nuclear material, and

(b) Informing local law enforcement agencies of the threat and requesting assistance.

(3) The licensee or his agent shall instruct every armed escort and all armed response personnel to prevent or impede acts of radiological sabotage or theft of strategic special material by using sufficient force to counter the force directed at him or her including the use of deadly force when armed escorts or armed response personnel have a reasonable belief that it is necessary in self-defense or in the defense of others.

(f) Transfer and Storage of Strategic Special Nuclear Material for Domestic Shipments.

(1) Strategic special nuclear material shall be placed in a protected area at transfer points if transfer is not immediate from one transport to another. Where a protected area is not available a controlled access area shall be established for the shipment. The transport may serve as a controlled access area.

(2) All transfers shall be protected by at least [nine] seven armed escorts or other armed personnel - one of whom shall serve as

commander. At least [seven] five of the armed personnel (including the commander) shall be available to protect the shipment and at least three of the [seven] five shall keep the strategic special nuclear material under continuous surveillance while it is at the transfer point. The two remaining armed personnel shall take up positions at a remote monitoring location. The remote location may be a radio-equipped vehicle or a nearby place, apart from the shipment area, so that a single act cannot remove the capability of the personnel protecting the shipment for calling for assistance. Each of the [nine] seven armed escorts or other armed personnel shall be capable of maintaining communication with each other. The commander shall have the capability to communicate with the personnel at the remote location and with local law enforcement agencies for emergency assistance. In addition, the armed escort personnel at the remote location shall have the capability to communicate with the law enforcement agencies and with the shipment movement control center. The commander shall call the remote location at least every 30 minutes to report the status of the shipment. If the calls are not received within the prescribed time, the personnel in the remote location shall request assistance from the law enforcement authorities, notify the shipment movement control center and initiate the appropriate contingency plans. Armed escorts or other armed personnel shall observe the opening of the cargo compartment of the incoming transport and ensure that the shipment is complete by checking locks and seals. A shipment loaded onto or transferred to another transport

shall be checked to assure complete loading or transfer. Continuous visual surveillance of the cargo compartment shall be maintained up to the time the transport departs from the terminal. The escorts shall observe the transport until it has departed and shall notify the licensee or his agent of the latest status immediately thereafter.

(g) Access Control Subsystems and Procedures.

(1) A numbered picture badge identification procedure shall be used to identify all individuals who will have custody of a shipment. The identification procedure shall require that the individual who has possession of the strategic special nuclear material shall have, in advance, identification picture badges of all individuals who are to assume custody for the shipment. The shipment shall be released only when the individual who has possession of strategic special nuclear material has assured positive identification of all of the persons assuming custody for the shipment by comparing the copies of the identification badges that [~~he has~~] have been received in advance to the identification badges [~~that the~~] carried by the individuals who will assume custody of the shipment [~~carry~~].

(2) Access to protected areas, controlled access areas, transports, escort vehicles, aircraft, rail cars, and containers where strategic special nuclear material is contained shall be limited to individuals authorized access to these areas after they have been properly identified.

(3) Strategic special nuclear material shall be shipped in containers that are protected by tamper-indicating seals. The containers also shall be locked if they are not in another locked container or transport. The outermost container or transport also shall be protected by tamper-indicating seals.

(h) Test and Maintenance Programs.

The licensee or his agent shall establish, maintain and follow a test and maintenance program for communications equipment and other physical protection related devices and equipment used pursuant to this section which shall include the following:

(1) Tests and inspections shall be conducted during the installation, and construction of physical protection related subsystems and components to assure that they comply with their respective design criteria and performance specifications.

(2) Preoperational tests and inspections shall be conducted for physical protection related subsystems and components to demonstrate their effectiveness, availability, and reliability with respect to their respective design criteria and performance specifications.

(3) Operational tests and inspections shall be conducted for physical protection related subsystems and components to assure their maintenance in an operable and effective condition.

(4) Preventive maintenance programs shall be established for physical protection related subsystems and components to assure their continued maintenance in an operable and effective condition.

(5) All physical protection related subsystems and components shall be maintained in operable condition. Corrective action procedures and compensatory measures shall be developed and employed to assure that the effectiveness of the physical protection system is not reduced by any single failure or other contingencies affecting the operation of the physical protection related equipment or structures.

(6) The transportation security program shall be reviewed at least every 12 months or prior to each use, whichever is greater, by individuals independent of both security management and security supervision. Such a review shall include a review and audit of security procedures and practices, evaluation of the effectiveness of the physical protection system, an audit of the physical protection system testing and maintenance program, and an audit of commitments established for response by local law enforcement authorities. The results of the review and audit along with recommendations for improvements shall be documented, reported to the responsible organization management, and kept available for inspection for a period of five years.

(i) Shipment by road.

(1) A detailed route plan shall be prepared which shows the routes to be taken, the refueling and rest stops, and the call-in times to the movement control center. All shipments shall be made

on primary highways with minimum use of secondary roads. All shipments shall be made without intermediate stops except for refueling, rest or emergency stops.

(2) Cargo compartments of the trucks or trailers shall be locked and protected by tamper-indicating seals.

(3) The shipment shall be protected by one of the following methods:

(i) A specially designed cargo vehicle truck or trailer that reduces the vulnerability to theft. Design features of the truck or trailer shall permit immobilization of the truck or of the cargo-carrying portion of the vehicle and shall provide a deterrent to physical penetration of the cargo compartment. Two separate escort vehicles shall accompany the cargo vehicle. There shall be a total of [nine] seven armed escorts with at least two in the cargo vehicle. Escorts may also operate the cargo and escort vehicles.

(ii) An armored car cargo vehicle. Three separate escort vehicles shall accompany such a cargo vehicle. There shall be a total of [nine] seven armed escorts, with at least two in the cargo vehicle. Escorts may also operate the cargo and escort vehicles.

(4) All escort vehicles shall be bullet-resisting.

(5) Procedures shall be established to assure that no unauthorized persons or materials are on the cargo vehicle before strategic special nuclear material is loaded, or on the escort vehicles, immediately before the trip begins.

(6) Cargo and escort vehicles shall maintain continuous intra-convoy two-way communication. In addition at least two of the vehicles shall be equipped with radio telephones having the capability of communicating with the movement control center. A redundant means of communication shall also be available. Calls to the movement control center shall be made at least every half hour to convey the status and position of the shipment. In the event no call is received in accordance with these requirements, the licensee or his agent shall immediately notify the law enforcement authorities and the appropriate Nuclear Regulatory Commission Inspection and Enforcement Regional Office listed in Appendix A of this part and initiate the appropriate contingency plan.

(7) At refueling, rest, or emergency stops at least [nine] seven armed escorts or other armed personnel shall be available to protect the shipment and at least three armed escorts or other armed personnel shall maintain continuous visual surveillance of the cargo compartment.

(8) Transfers to and from other modes of transportation shall be in accordance with paragraph (f) of this section.

(j) Shipment by Air.

(1) All shipments on commercial cargo aircraft shall be accompanied by two armed escorts who shall be able to converse in a common language with the captain of the aircraft.

(2) Transfers of these shipments shall be minimized and shall be conducted in accordance with paragraph (f) of this section. Such shipments shall be scheduled so that the strategic special nuclear material is loaded last and unloaded first.

(3) At scheduled stops, at least [nine] seven armed escorts or other armed personnel shall be available to protect the shipment and at least three armed escorts or other armed personnel shall maintain continuous visual surveillance of the cargo compartment.

(4) Export shipments shall be accompanied by two armed escorts from the last terminal in the United States until the shipment is unloaded at a foreign terminal and prime responsibility for physical protection is assumed by agents of the consignee. While on foreign soil, the escorts may surrender their weapons to legally constituted local authorities. After leaving the last terminal in the United States the shipment shall be scheduled with no intermediate stops.

(5) Import shipments shall be accompanied by two armed escorts at all times within the geographical limits of the United States. These escorts shall provide physical protection for the shipment until relieved by verified agents of the U.S. consignee.

(6) Procedures shall be established to assure that no unauthorized persons or material are on the aircraft before strategic special nuclear material is loaded on board.

(7) Arrangements shall be made at all domestic airports to assure that the [nine] seven required armed escorts or other armed

personnel are available and that the required security measures will be taken upon landing.

(8) Arrangements shall be made at the foreign terminal at which the shipment is to be unloaded to assure that security measures will be taken on arrival.

(k) Shipment by Rail.

(1) A shipment by rail shall be escorted by [~~nine~~] seven armed escorts in the shipment car or an escort car next to the shipment car of the train. At least three escorts shall keep the shipment car under continuous visual surveillance. Escorts shall detrain at stops when practicable and time permits to maintain the shipment cars under continuous visual surveillance and to check car or container locks and seals.

(2) Procedures shall be established to assure that no unauthorized persons or materials are on the shipment or escort car before strategic special nuclear material is loaded on board.

(3) Only containers weighing 5000 lbs or more shall be shipped on open rail cars.

(4) A voice communication capability between the escorts and the movement control center shall be maintained. A redundant means of continuous communication also shall be available. Calls to the movement control center shall be made at least every half hour to convey the status and position of the shipment. In the event no call is received in accordance with these requirements, the licensee or his agent shall immediately notify the law enforcement authorities

and the appropriate Nuclear Regulatory Commission Regional Office listed in Appendix A of this part and initiate their contingency plan.

(5) Transfer to and from other modes of transportation shall be in accordance with paragraph (f) of this section.

(1) Shipment by Sea

(1) Shipments shall be made only on container-ships. The strategic special nuclear material container(s) shall be loaded into exclusive use cargo containers conforming to American National Standards Institute (ANSI) MH5.1 or International Standards Organization (ISO) 1496. Locks and seals shall be inspected by the escorts whenever access is possible.

(2) All shipments shall be accompanied by two armed escorts who shall be able to converse in a common language with the captain of the ship.

(3) Minimum domestic ports of call shall be scheduled and there shall be no scheduled transfer to other vessels after the shipment leaves the last port in the United States. Transfer to and from other modes of transportation shall be in accordance with paragraph (f) of this section.

(4) At all ports of call the escorts shall ensure that the shipment is not removed. At least two armed escorts or other armed personnel shall maintain continuous visual surveillance of the cargo area where the container is stored up to the time the ship departs.

(5) Export shipment shall be accompanied by two armed escorts from the last port in the United States until the shipment is unloaded

at a foreign terminal and prime responsibility for physical protection is assumed by agents of the consignee. While on foreign soil, the escorts may surrender their weapons to legally constituted local authorities.

(6) Import shipments shall be accompanied by two armed escorts at all times within the geographical limits of the United States. These escorts shall provide physical protection for the shipment until relieved by verified agents of the U.S. consignee.

(7) Ship-to-shore communications shall be available, and a ship-to-shore contact shall be made every six hours to relay position information, and the status of the shipment.

(8) Arrangements shall be made at the foreign terminals at which the shipment is to be unloaded to assure that security measures will be taken upon arrival.

§ 73.27 Notification Requirements.

(a) (1) A licensee who delivers formula quantities of strategic special nuclear material to a carrier for transport shall immediately notify the consignee by telephone, telegraph, or teletype, of the time of departure of the shipment, and shall notify or confirm with the consignee the method of transportation, including the names of carriers, and the estimated time of arrival of the shipment at its destination. (2) In the case of a shipment (f.o.b.) the point where it is delivered to a carrier for transport, a licensee shall, before the shipment is delivered to the carrier, obtain written

certification from the licensee who is to take delivery of the shipment at the f.o.b. point that the physical protection arrangements required by §§ 73.25 and 73.26 for licensed shipments have been made. When a contractor exempt from the requirements for a Commission license is the consignee of a shipment, the licensee shall, before the shipment is delivered to the carrier, obtain written certification from the contractor who is to take delivery of the shipment at the f.o.b. point that the physical protection arrangements required by the United States Department of Energy [~~Manual Chapters 2401 or 2405~~] Order Nos. 5632.1 or 5632.2, as appropriate, have been made. (3) A licensee who delivers formula quantities of strategic special nuclear material to a carrier for transport or releases such special nuclear material f.o.b. at the point where it is delivered to a carrier for transport shall also make arrangements with the consignee to be notified immediately by telephone and telegraph, teletype, or cable, of the arrival of the shipment at its destination or of any such shipment that is lost or unaccounted for after the estimated time of arrival at its destination.

(b) Each licensee who receives a shipment of formula quantities of strategic special nuclear material shall immediately notify by telephone and telegraph or teletype, the person who delivered the material to a carrier for transport and the Director of the appropriate Nuclear Regulatory Commission Inspection and Enforcement Regional Office listed in Appendix A of the arrival of the shipment at its destination. When a United States Department of Energy

license-exempt contractor is the consignee, the licensee who is the consignor shall notify by telephone and telegraph, or teletype, the Director of the appropriate Nuclear Regulatory Commission Inspection and Enforcement Regional Office listed in Appendix A of the arrival of the shipment at its destination immediately upon being notified of the receipt of the shipment by the license-exempt contractor as arranged pursuant to paragraph (a)(3) of this section. In the event such a shipment fails to arrive at its destination at the estimated time, or in the case of an export shipment, the licensee who exported the shipment, shall immediately notify by telephone and telegraph or teletype, the Director of the appropriate Nuclear Regulatory Commission Inspection and Enforcement Regional Office listed in Appendix A of this part, and the licensee or other person who delivered the material to a carrier for transport. The licensee who made the physical protection arrangements shall also immediately notify by telephone and telegraph, or teletype, the Director of the appropriate Nuclear Regulatory Commission Inspection and Enforcement Regional Office listed in Appendix A of the action being taken to trace the shipment.

(c) Each licensee who makes arrangements for physical protection of a shipment of formula quantities of strategic special nuclear material as required by §§ 73.25 and 73.26 shall immediately conduct a trace investigation of any shipment that is lost or unaccounted for after the estimated arrival time and file a report with the Commission as specified in § 73.71. [~~If the licensee who conducts~~

~~the trace investigation is not the consignee; he shall also immediately report the results of his investigation by telephone and telegraph, or teletype to the consignee.]~~

§ 73.45 Performance Capabilities for Fixed Site Physical Protection Systems.

(a) To meet the general performance requirements of § 73.20 a fixed site physical protection system shall include the performance capabilities described in paragraphs (b) through (g) of this section unless otherwise authorized by the Commission.

(b) Prevent unauthorized access of persons, vehicles and materials into material access areas and vital areas. To achieve this capability the physical protection system shall:

(1) Detect attempts to gain unauthorized access or introduce unauthorized material across material access or vital area boundaries by stealth or force using the following subsystems and subfunctions:

(i) Barriers to channel persons and material to material access and vital area entry control points and to delay any unauthorized penetration attempts by persons or materials sufficient to assist detection and permit a response that will prevent the penetration; and

(ii) Access detection subsystems and procedures to detect, assess and communicate any unauthorized penetration attempts by persons or materials at the time of the attempt so that the response can prevent the unauthorized access or penetration.

(2) Detect attempts to gain unauthorized access or introduce unauthorized materials into material access areas or vital areas by deceit using the following subsystems and subfunctions:

(i) Access authorization controls and procedures to provide current authorization schedules and entry criteria for both persons and materials; and

(ii) Entry controls and procedures to verify the identity of persons and materials and assess such identity against current authorization schedules and entry criteria before permitting entry and to initiate response measures to deny unauthorized entries.

(c) Permit only authorized activities and conditions within protected areas, material access areas, and vital areas. To achieve this capabilitiy the physical protection system shall:

(1) Detect unauthorized activities or conditions within protected areas, material access areas and vital areas using the following subsystems and subfunctions:

(i) Controls and procedures that establish current schedules of authorized activities and conditions in defined areas;

(ii) Boundaries to define areas within which the authorized activities and conditions are permitted; and

(iii) Detection and surveillance subsystems and procedures to discover and assess unauthorized activities and conditions and communicate them so that response can be such as to stop the activity or correct the conditions [~~before strategic special nuclear material~~

~~is stolen or radiological sabotage committed~~] to satisfy the general performance requirements of § 73.20(a).

(d) Permit only authorized placement and movement of strategic special nuclear material within material access areas. To achieve this capability the physical protection system shall:

(1) Detect unauthorized placement and movement of strategic special nuclear material within the material access area using the following subsystems and subfunctions:

(i) Controls and procedures to delineate authorized placement and control for strategic special nuclear material;

(ii) Controls and procedures to establish current authorized placement and movement of all strategic special nuclear material within material access areas;

(iii) Controls and procedures to maintain knowledge of the identity, quantity, placement, and movement of all strategic special nuclear material within material access areas; and

(iv) Detection and monitoring subsystems and procedures to discover and assess unauthorized placement and movement of strategic special nuclear material and communicate them so that response can be such as to return the strategic special nuclear material to authorized placement or control.

(e) Permit removal of only authorized and confirmed forms and amounts of strategic special nuclear material from material access areas. To achieve this capability the physical protection system shall:

(1) Detect attempts at unauthorized removal of strategic special nuclear material from material access areas by stealth or force using the following subsystems and subfunctions:

(i) Barriers to channel persons and materials exiting a material access area to exit control points and to delay any unauthorized strategic special nuclear material removal attempts sufficient to assist detection and assessment and permit a response that will prevent the removal; and satisfy the general performance requirements of (§ 73.20(a); and

(ii) Detection subsystems and procedures to detect, assess and communicate any attempts at unauthorized removal of strategic special nuclear material so that response to the attempt can be such as to prevent the removal and satisfy the general performance requirements of § 73.20(a).

(2) Confirm the identity and quantity of strategic special nuclear material presented for removal from a material access area and detect attempts at unauthorized removal of strategic special nuclear material from material access areas by deceit using the following subsystems and subfunctions:

(i) Authorization controls and procedures to provide current schedules for authorized removal of strategic special nuclear material which specify the authorized properties and quantities of material to be removed, the persons authorized to remove the material, and the authorized time schedule;

(ii) Removal controls and procedures to identify and confirm the properties and quantities of material being removed and verify the identity of the persons making the removal and time of removal and assess these against the current authorized removal schedule before permitting removal; and

(iii) Communications subsystems and procedures to provide for notification of an attempted unauthorized or unconfirmed removal so that response can be such as to prevent the removal and satisfy the general performance requirements of (§ 73.20(a).

(f) Provide for authorized access and assure detection of and response to unauthorized penetrations of the protected area to [prevent-theft-of-strategic-special-nuclear-material-and-to-protect against-radiological-sabotage] satisfy the general performance requirements of § 73.20(a). To achieve this capability the physical protection system shall:

(1) Detect attempts to gain unauthorized access or introduce unauthorized persons, vehicles, or materials into the protected area by stealth or force using the following subsystems and subfunctions:

(i) Barriers to channel persons, vehicles, and materials to protected area entry control points; and to delay any unauthorized penetration attempts or the introduction of unauthorized vehicles or materials sufficient to assist detection and assessment and permit a response that will prevent the penetration or prevent such penetration [from-resulting-in-theft-of-strategic-special-nuclear-material

~~or radiological sabotage~~ and satisfy the general performance requirements of § 73.20(a); and

(ii) Access detection subsystems and procedures to detect, assess and communicate any unauthorized access or penetrations or such attempts by persons, vehicles, or materials at the time of the act or the attempt so that the response can be such as to prevent the unauthorized access or penetration, ~~[or prevent such penetration from resulting in theft of strategic special nuclear material or radiological sabotage]~~ and satisfy the general performance requirements of § 73.20(a).

(2) Detect attempts to gain unauthorized access or introduce unauthorized persons, vehicles, or materials into the protected area by deceit using the following subsystems and subfunctions:

(i) Access authorization controls and procedures to provide current authorization schedules and entry criteria for persons, vehicles, and materials; and

(ii) Entry controls and procedures to verify the identity of persons, materials and vehicles and assess such identity against current authorization schedules before permitting entry and to initiate response measures to deny unauthorized access.

(g) Response. Each physical protection program shall provide a response capability to assure that the five capabilities described in paragraphs (b) through (f) of this section are achieved and the adversary forces will be engaged and impeded until offsite assistance forces arrive. To achieve this capability a licensee shall:

(1) Establish a security organization to:

(i) Provide trained and qualified personnel to carry out assigned duties and responsibilities; and

(ii) Provide for routine security operations and planned and predetermined response to emergencies and safeguards contingencies.

(2) Establish a predetermined plan to respond to safeguards contingency events.

(3) Provide equipment for the security organization and facility design features to:

(i) Provide for rapid assessment of safeguards contingencies;

(ii) Provide for response by assigned security organization personnel which is sufficiently rapid and effective so as to achieve the predetermined objective of the response; and

(iii) Provide protection for the assessment and response personnel so that they can complete their assigned duties.

(4) Provide communications networks to:

(i) Provide rapid and accurate transmission of security information among onsite forces for routine security operation, assessment of a contingency, and response to a contingency; and

(ii) provide rapid and accurate transmission of detection and assessment information to off-site assistance forces.

(5) Assure that a single adversary action cannot destroy the capability of the security organization to notify the offsite assistance forces of the need for assistance.

§ 73.46 Fixed Site Physical Protection Systems, Subsystems, [~~Elements,~~] Components, and Procedures.

(a) A licensee physical protection system established pursuant to the general performance requirements of § 73.20(a)[~~(1) and (a)(2)~~] and the performance capability requirements of § 73.45 of this part shall include, but are not necessarily limited to, the measures specified in paragraphs (b) through (h) of this section. The Commission may require, depending on individual facility and site conditions, alternate or additional measures deemed necessary to meet the general performance requirements of § 73.20 of this part. The Commission also may authorize protection measures other than those required by this section if, in its opinion, the overall level of performance meets the general performance requirements of § 73.20 and the performance capability requirements of § 73.45 of this part.

(b) Security Organization

(1) The licensee shall establish a security organization, including guards. If a contract guard force is utilized for security, the licensee's written agreement with the contractor will clearly show that (1) the licensee is responsible to the Commission for maintaining safeguards in accordance with Commission regulations and the licensee's security plan, (2) the NRC may inspect, copy, and take away copies of all reports and documents required to be kept by Commission regulations, orders, or applicable license conditions whether such reports and documents are kept by the licensee or the contractor, (3) the requirement, in Paragraph 73.46(b)(4) of this section that

the licensee demonstrate the ability of physical security personnel to perform their assigned duties and responsibilities, include demonstration of the ability of the contractor's physical security personnel to perform their assigned duties and responsibilities in carrying out the provisions of the Security Plan and these regulations, and (4) the contractor will not assign any personnel to the site who have not first been made aware of these responsibilities.

(2) The licensee shall have onsite at all time at least one full time member of the security organization with authority to direct the physical protection activities of the security organization.

(3) The licensee shall have a management system to provide for the development, revision, implementation, and enforcement of security procedures. The system shall include:

(i) Written security procedures which document the structure of the security organization and which detail the duties of guards, watchmen and other individuals responsible for security; and

(ii) Provision for written approval of such procedures and any revisions thereto by the individual with overall responsibility for the security function.

(4) The licensee shall not permit an individual to act as a guard, watchman, armed response person, or other member of the security organization unless such individual has been trained, equipped, and qualified to perform each assigned security job duty in accordance with Appendix B of this part "General Criteria for Security Personnel." ~~[to be published soon as an effective rule.]~~

Upon the request of an authorized representative of the Commission the licensee shall demonstrate the ability of the physical security personnel whether licensee or contractor employees to carry out their assigned duties and responsibilities. Each guard, watchman, armed response person, [and] or other member of the security organization whether a licensee or contractor employee shall requalify in accordance with Appendix B of this part at least every 12 months. Such requalification shall be documented.

(5) Within any given period of time, a member of the security organization may not be assigned to, or have direct operational control over, more than one of the redundant elements of a physical protection subsystem if such assignment or control could result in the loss of effectiveness of the subsystem.

(c) Physical Barrier Subsystems

(1) Vital equipment shall be located only within a vital area and strategic special nuclear material shall be stored or processed only in a material access area. Both vital areas and material access areas shall be located within a protected area so that access to vital equipment and to strategic special nuclear material requires passage through at least two physical barriers. More than one vital area or material access area may be located within a single protected area.

(2) The physical barriers at the perimeter of the protected area shall be separated from any other barrier designated as a

physical barrier for a vital area or material access area within the protected area.

(3) Isolation zones shall be maintained in outdoor areas adjacent to the physical barrier at the perimeter of the protected area and shall be large enough to permit observation of the activities of people on either side of that barrier in the event of its penetration. If parking facilities are provided for employees or visitors, they shall be located outside the isolation zone and exterior to the protected area.

(4) Isolation zones and all exterior areas within the protected area shall be provided with illumination sufficient for the monitoring and observation requirements of paragraphs (c)(3), (e)(8), (h)(4) and (h)(5) of this section, but not less than 0.2 footcandle measured at ground level.

(5) Strategic special nuclear material, other than alloys, fuel elements or fuel assemblies, shall:

(i) Be stored in a vault when not undergoing processing if the material can be used directly in the manufacture of a nuclear explosive device[;]. Vaults used to protect such material shall be capable of preventing entry to stored SSNM by a single action in a forced entry attempt, except as such single action would both destroy the barrier and render contained SSNM incapable of being removed, and shall provide sufficient delay to prevent removal of stored SSNM prior to arrival of response personnel capable of neutralizing the design basis threat stated in § 73.1.

(ii) Be stored in [penetration-resistant] tamper-indicating containers;

(iii) Be processed only in material access areas constructed with barriers that provide significant delay to penetration; and

(iv) be kept in locked compartments or locked process equipment while undergoing processing except when personally attended.

(6) Enriched uranium scrap (enriched to 20% or greater) in the form of small pieces, cuttings, chips, solutions or in other forms which result from a manufacturing process, contained in 30 gallon or larger containers with a uranium-235 content of less than 0.25 grams per liter, may be stored within a locked and separately fenced area within a larger protected area provided that the storage area fence is no closer than 25 feet to the perimeter of the protected area. The storage area when unoccupied shall be protected by a guard or watchman who shall patrol at intervals not exceeding 4 hours, or by intrusion alarms.

(d) Access Control Subsystems and Procedures

(1) A numbered picture badge identification subsystem shall be used for all individuals who are authorized access to protected areas without escort. An individual not employed by the licensee but who requires frequent and extended access to protected, material access, and vital areas may be authorized access to such areas without escort provided that he receives a picture badge upon entrance into the protected area which must be returned upon exit from the protected area and which indicates (i) Non-employee-no escort required; (ii) areas

to which access is authorized and (iii) the period for which access has been authorized. Badges shall be displayed by all individuals while inside the protected areas.

(2) Unescorted access to vital areas, material access areas and controlled access areas shall be limited to individuals who have an NRC or DOE [~~material~~] access authorization,[2/] who are authorized access to the material and equipment in such areas, and who require such access to perform their duties. Access to material access areas shall include at least two individuals. Authorization for such individuals shall be indicated by the issuance of specially coded numbered badges indicating vital areas, material access areas, and controlled access areas to which access is authorized. No activities other than those which require access to strategic special nuclear material or equipment used in the processing, use, or storage of strategic special nuclear material, or necessary maintenance, shall be permitted within a material access area.

(3) The licensee shall establish and follow procedures that will identify to access control personnel those vehicles that are authorized and those materials that are not authorized entry to protected, material access, and vital areas

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2/ Proposed amendments requiring an NRC material access authorization program for licensee access to or control over special nuclear material (SECY-76-508) were published as a proposed rule on March 17, 1977 (42 FR 14880) and were discussed in a public hearing on July 10, 11, and 12, 1978.

(4) The licensee shall control all points of personnel and vehicle access into a protected area. Identification and search of all individuals for firearms, explosives, and incendiary devices, shall be made and authorization shall be checked at such points. United States Department of Energy couriers engaged in the transport of special nuclear material need not be searched. Licensee employees having an NRC or United States Department of Energy [~~material~~] access authorization shall be searched at least on a random basis. The individual responsible for the last access control function (controlling admission to the protected area) shall be isolated within a structure, with bullet-resisting walls, doors, ceiling, floor, and windows.

(5) At the point of personnel and vehicle access into a protected area, all hand-carried packages shall be searched for firearms, explosives, and incendiary devices except those packages carried by persons having an NRC or DOE [~~material~~] access authorization which shall be searched on a random basis when the person carrying them is selected for search.

(6) All packages and material for delivery into the protected area shall be checked for proper identification and authorization and searched on a random basis for firearms, explosives, and incendiary devices prior to admittance into the protected area, except those Commission approved delivery and inspection activities specifically designated by the licensee to be carried out within material access,

vital, or protected areas for reasons of safety, security or operational necessity.

(7) All vehicles, except United States Department of Energy vehicles engaged in transporting special nuclear material and emergency vehicles under emergency conditions, shall be searched for firearms, explosives, and incendiary devices prior to entry into the protected area. Vehicle areas to be searched shall include the cab, engine compartment, undercarriage, and cargo area.

(8) All vehicles, except designated licensee vehicles, requiring entry into the protected area shall be escorted by a member of the security organization while within the protected area, and to the extent practicable shall be off-loaded in an area that is not adjacent to a vital area. Designated licensee vehicles shall be limited in their use to onsite plant functions and shall remain in the protected area except for operational, maintenance, security and emergency purposes. The licensee shall exercise positive control over all such designated vehicles to assure that they are used only by authorized persons and for authorized purposes.

(9) The licensee shall control all points of personnel and vehicle access to material access areas, vital areas and controlled access areas. Identification of personnel and vehicles shall be made and authorization checked at such points. Prior to entry into a material access area, packages shall be searched for firearms, explosives, and incendiary devices. All vehicles, materials and packages, including trash, wastes, tools and equipment exiting from

a material access area shall be searched for concealed strategic special nuclear material by a team of at least two individuals who are not authorized access to that material access area. Each individual exiting a material access area shall undergo at least two separate searches for concealed strategic special nuclear material. For individuals exiting an area that contains only alloyed or encapsulated strategic special nuclear material, the second search may be conducted in a random manner.

(10) Before exiting from a material access area, containers of contaminated wastes shall be drum scanned and tamper sealed by at least two individuals, working and recording as a team, who do not have access to material processing and storage areas.

(11) Strategic special nuclear material being prepared for shipment off-site, including product, samples and scrap, shall be packed and placed in sealed containers in the presence of at least two individuals working as a team who shall verify and certify the content of each shipping container through the witnessing of gross weight measurements and non-destructive assay, and through the inspection of tamper seal integrity and associated seal records.

(12) Areas used for preparing strategic special nuclear material for shipment and areas used for packaging and screening trash and wastes shall be controlled access areas and shall be separated from processing and storage areas.

(13) Individuals not permitted by the licensee to enter protected areas without escort shall be escorted by a watchman, or other individual designated by the licensee, while in a protected area and shall be badged to indicate that an escort is required. In addition, the individual shall be required to register his name, date, time, purpose of visit and employment affiliation, citizenship, and name of the individual to be visited.

(14) All keys, locks, combinations and related equipment used to control access to protected, material access, vital, and controlled access areas shall be controlled to reduce the probability of compromise. Whenever there is evidence that a key, lock, combination, or related equipment may have been compromised it shall be changed. Upon termination of employment of any employee, keys, locks, combinations, and related equipment to which that employee had access, shall be changed.

(e) Detection, Surveillance and Alarm Subsystems and Procedures

(1) The licensee shall provide an intrusion alarm subsystem with a capability to detect penetration through the isolation zone and to permit response action.

(2) All emergency exits in each protected, material access, and vital area shall be locked to prevent entry from the outside and alarmed to provide local visible and audible alarm annunciation.

(3) All unoccupied vital areas and material access areas shall be locked and protected by an intrusion alarm subsystem which will alarm upon the entry of a person anywhere into the area, upon exit

from the area, and upon movement of an individual within the area, except that for process material access areas only the location of the strategic special nuclear material within the area is required to be so alarmed. Vaults and process areas that contain strategic special nuclear material that has not been alloyed or encapsulated shall also be under the surveillance of closed circuit television that is monitored in both alarm stations. ~~[and at least one other continuously manned on-site location.]~~ Additionally, means shall be employed which require that an individual other than an alarm station operator be present at or have knowledge of access to such unoccupied vaults or process areas.

(4) All manned access control points in the protected area barrier, all security patrols and guard stations within the protected area, and both alarm stations shall be provided with duress alarms.

(5) All alarms required pursuant to this section shall annunciate in a continuously manned central alarm station located within the protected area and in at least one other independent continuously manned on-site station not necessarily within the protected area, so that a single act cannot remove the capability of calling for assistance or responding to an alarm. The alarm stations shall be controlled access areas and their walls, doors, ceiling, floor, and windows shall be bullet-resisting. The central alarm station shall be located within a building so that the interior of the central alarm station is not visible from the perimeter of the protected area.

This station may not contain any operational activities that would interfere with the execution of the alarm response function.

(6) All alarms required by this section shall remain operable from independent power sources in the event of the loss of normal power. Switchover to standby power shall be automatic and shall not cause false alarms on annunciator modules.

(7) All alarm devices including transmission lines to annunciators shall be tamper indicating and self-checking e.g., an automatic indication is provided when a failure of the alarm system or a component occurs, when there is an attempt to compromise the system, or when the system is on standby power. The annunciation of an alarm at the alarm stations shall indicate the type of alarm (e.g., intrusion alarm, emergency exit alarm, etc.) and location. The status of all alarms and alarm zones shall be indicated in the alarm stations.

(8) All exterior areas within the protected area shall be monitored or periodically checked to detect the presence of unauthorized persons, vehicle, materials, or unauthorized activities.

(9) Methods to observe individuals within material access areas to assure that strategic special nuclear material is not moved to unauthorized locations or in an unauthorized manner shall be provided and used on a continuing basis.

(f) Communication Subsystems

(1) Each guard, watchman, or armed response individual on duty shall be capable of maintaining continuous communication with an

individual in each continuously manned alarm station required by paragraph (e)(5) of this section, who shall be capable of calling for assistance from other guards, watchmen, and armed response personnel and from law enforcement authorities.

(2) Each alarm station required by paragraph (e)(5) of this section shall have both conventional telephone service and radio or microwave transmitted two-way voice communication, either directly or through an intermediary, for the capability of communication with the law enforcement authorities.

(3) Non-portable communications equipment controlled by the licensee and required by this section shall remain operable from independent power sources in the event of the loss of normal power.

(g) Test and Maintenance Programs

The licensee shall have a test and maintenance program for intrusion alarms, emergency exit alarms, communications equipment, physical barriers, and other physical protection related devices and equipment used pursuant to this section that shall provide for the following:

(1) Tests and inspections during the installation and construction of physical protection related subsystems and components to assure that they comply with their respective design criteria and performance specifications.

(2) Preoperational tests and inspections of physical protection related subsystems and components to demonstrate their effectiveness

and availability with respect to their respective design criteria and performance specifications.

(3) Operational tests and inspections of physical protection related subsystems and components to assure their maintenance in an operable and effective condition, including:

(i) Testing of each intrusion alarm at the beginning and end of any period that it is used. If the period of continuous use is longer than seven days, the intrusion alarm shall also be tested at least once every seven days.

(ii) Testing of communications equipment required for communications onsite, including duress alarms, for performance not less frequently than once at the beginning of each security personnel work shift. Communications equipment required for communications offsite shall be tested for performance not less than once a day.

(4) Preventive maintenance programs shall be established for physical protection related subsystems and components to assure their continued maintenance in an operable and effective condition.

(5) All physical protection related subsystems and components shall be maintained in operable condition. The licensee shall develop and employ corrective action procedures and compensatory measures to assure that the effectiveness of the physical protection system is not reduced by failure or other contingencies affecting the operation of the security related equipment or structures. Repairs and maintenance shall be performed by at least two individuals

working as a team who have been trained in the operation and performance of the equipment. The security organization shall be notified before and after service is performed and shall conduct performance verification tests after the service has been completed.

(6) The security program shall be reviewed at least every 12 months by individuals independent of both security management and security supervision. The review shall include a review and audit of security procedures and practices, evaluation of the effectiveness of the physical protection system, an audit of the physical protection system testing and maintenance program, and an audit of commitments established for response by local law enforcement authorities. The results of the review, audit, and evaluation along with recommendations, corrections and improvements, if any, shall be documented, reported to the licensee's plant management, and to corporate management at least one level higher than that having responsibility for the day to day plant operations. The reports shall be kept available at the plant for inspection for a period of five years.

(h) Contingency and Response Plans and Procedures

(1) The licensee shall have a safeguards contingency plan for dealing with threats, thefts, and radiological sabotage related to the strategic special nuclear material and nuclear facilities subject to the provisions of this section. Safeguards contingency plans shall be in accordance with the criteria in Appendix C to this part, "Licensee Safeguards Contingency Plans" (43 FR 11962). Contingency plans

shall include, but not be limited to, the response requirements in paragraphs (h)(2) through (h)(5) of this section.

(2) The licensee shall establish and document response arrangements that have been made with local law enforcement authorities.

(3) A minimum of five (5) guards shall be available at the facility to fulfill assessment and response requirements. In addition a force of guards or armed response personnel also shall be available to provide assistance as necessary. The size and availability of the additional force shall be determined on the basis of site-specific considerations that could affect the ability of the total onsite response force to engage and impede the adversary force until offsite assistance arrives. The reason for determining the total number and availability of onsite armed response personnel shall be included in the physical protection plans submitted to the Commission for approval.

(4) Upon detection of abnormal presence or activity of persons or vehicles within an isolation zone, a protected area, a material access area, or a vital area, or upon evidence or indication of intrusion into a protected area, a material access area, or a vital area, the licensee security organization shall:

(i) Determine whether or not a threat exists,

(ii) Assess the extent of the threat, if any,

(iii) Take immediate concurrent measures to neutralize the threat by:

(A) Requiring responding guards or other armed response personnel to interpose themselves between vital areas and material access areas and any adversary attempting entry for purposes of radiological sabotage or theft of strategic special nuclear material and to intercept any person exiting with special nuclear material, and

(B) Informing local law enforcement agencies of the threat and requesting assistance.

(5) The licensee shall instruct every guard and all armed response personnel to prevent or impede acts of radiological sabotage or theft of strategic special nuclear material by using force sufficient to counter the force directed at him or her, including the use of deadly force when the guard or other armed response person has a reasonable belief that it is necessary in self-defense or in the defense of others.

(6) To facilitate initial response to detection of penetration of the protected area and assessment of the existence of a threat, a capability of observing the isolation zones and the physical barrier at the perimeter of the protected area shall be provided, preferably by means of closed circuit television or by other suitable means which limit exposure of responding personnel to possible attack.

(7) Alarms occurring within unoccupied vaults and unoccupied material access areas containing unalloyed or unencapsulated strategic special nuclear material shall be assessed by at least two security personnel using closed circuit television (CCTV) or other remote means.

(8) Alarms occurring within unoccupied material access areas that contain only alloyed or encapsulated strategic special nuclear material shall be assessed as in paragraph (7) above or by at least two security personnel who shall undergo a search before exiting the material access area.

11. Paragraph 73.55(a) is revised to read as follows:

§73.55 Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage.

* * * * *

(a) General Performance Requirements

The licensee shall establish and maintain an onsite physical protection system and security organization which will provide reasonable assurance that activities involving special nuclear material are not inimical to the common defense and security, and do not constitute an unreasonable risk to the public health and safety. The physical protection system shall be designed to protect against the design basis threat of radiological sabotage as stated in § 73.1(a). In meeting these general performance requirements, the onsite physical protection system and security organization shall include, but not necessarily be limited to, the capabilities to meet the specific requirements contained in paragraphs (b) through (h) of this section. The Commission may authorize an applicant or licensee to provide measures for protection against radiological sabotage other than those required by this section if the applicant or licensee demonstrates that the overall

level of system performance provides protection against radiological sabotage equivalent to that which would be provided by paragraphs (b)--(h) of this section and meets the general performance requirements of this section. Specifically, in the special cases of licensed operating reactors with adjacent reactor powerplants under construction, the licensee shall provide and maintain a level of physical protection of the operating reactor against radiological sabotage equivalent to the requirements of this section.

1[~~1~~]2. Paragraph 73.55(b) is revised to read as follows:

§ 73.55 Requirements for physical protection of licensed activities nuclear power reactors agains radiological sabotage.

* * * * *

(b) Physical Security Organization

(1) The licensee shall establish a security organization, including guards, to protect his facility against radiological sabotage.

(2) At least one full time member of the security organization who has the authority to direct the physical protection activities of the security organization shall be onsite at all times.

(3) The licensee shall have a management system to provide for the development, revision, implementation, and enforcement of security procedures. The system shall include:

(i) written security procedures which document the structure of the security organization and which detail [and] the duties of guards, watchmen and other individuals responsible for security; and

(ii) provision for written approval of such procedures and any revisions thereto by the individual with overall responsibility for the security functions.

(4) The licensee shall not permit an individual to act as a guard, watchman or armed response person, or other member of the security organization unless such individual has been trained, equipped, and qualified to perform each assigned security job duty in accordance with Appendix B, of this part "General Criteria for Security Personnel." [~~to-be-published-soon-as-an-effective-rule:~~] Upon the request of an authorized representative of the Commission the licensee shall demonstrate the ability of the physical security personnel to carry out their assigned duties and responsibilities. Each guard, watchman, armed response person, and other member of the security organization shall requalify in accordance with Appendix B of this part at least every 12 months. Such requalification shall be documented. By (300 days after the rule becomes effective) each licensee shall submit a training and qualifications plan outlining the processes by which guards, watchmen, armed response persons, and other members of the security organization will be selected, trained, equipped, tested, and qualified to assure these individuals meet the requirements of this paragraph. The training and qualifications plan shall include a schedule to show how all security personnel

will be qualified by (within two years after the rule becomes effective) or within two years after the submitted plan is approved, whichever is later. The training and qualifications plan shall be followed by the licensee after (500 days after the rule becomes effective) or 60 days after the submitted plan is approved by the NRC, whichever is later.

1[2]3. Paragraph 73.55(g) is amended to add a new paragraph (4) to read as follows:

§ 73.55 Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage.

* * * * *

(g) Testing and Maintenance

* * * * *

(4) The security program shall be reviewed at least every 12 months by individuals independent of both security management and security supervision. The review shall include a review and audit of security procedures and practices, evaluation of the effectiveness of the physical protection system, an audit of the physical protection system testing and maintenance program and an audit of commitments established for response by local law enforcement authorities. The results of the review audit and evaluation along with recommendations for corrections and improvements, if any, shall be documented,

reported to the licensee's plant management and to corporate management at least one level higher than that having responsibility for the day to day plant operation. The reports shall be kept available at the plant for inspection for a period of five years.

1[3]4. Paragraph 73.55(h) is amended to renumber paragraph (h)(5) as (h)(6) and revise paragraph h(4) as paragraphs (h)(4) and (5) as follows:

§ 73.55 Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage.

* * * * *

(h) Response requirement.

* * * * *

(4) Upon detection of abnormal presence or activity of persons or vehicles within an isolation zone, a protected area, a material access area, or a vital area; or upon evidence or indication of intrusion into a protected area, material access area, or vital area, the licensee security organization shall:

(i) Determine whether or not a threat exists,

(ii) Assess the extent of the threat, if any,

(iii) Take immediate concurrent measures to neutralize the threat by:

(A) Requiring responsing guards to interpose themselves between material access areas and vital areas and any adversary attempting

entry for the purpose of theft of special nuclear material or [~~industrial~~] radiological sabotage and to intercept any person exiting with special nuclear material, and,

(B) Informing local law enforcement agencies of the threat and requesting assistance.

(5) The licensee shall instruct every guard to prevent or impede attempted acts of theft or [~~industrial~~] radiological sabotage by using force sufficient to counter the force directed at him including deadly force when the guard has a reasonable belief it is necessary in self-defense or in the defense of others.

* * * * *

1[~~4~~]5. The prefatory language of § 73.70 and paragraphs 73.70(c) and (g) is revised to read as follows:

§ 73.70 Records.

Each licensee subject to the provisions of §§ 73.20, 73.25, 73.26, 73.27, and/or §§ 73.45, 73.46, and/or § 73.55 shall keep the following records:

* * * * *

(c) A register of visitors, vendors, and other individuals not employed by the licensee pursuant to § 73.46(d)(10) and § 73.55(d)(6).

* * * * *

(g) Shipments of special nuclear material subject to the requirements of this part, including names of carriers, major roads to be used,

flight numbers in the case of air shipments, dates and expected times of departure and arrival of shipments, verification of communication equipment on board the transfer vehicle, names of individuals who are to communicate with the transport vehicle, container seal descriptions and identification, and any other information to confirm the means utilized to comply with §§ 73.25, 73.26 and 73.27. Such information shall be recorded prior to shipment. Information obtained during the course of the shipment such as reports of all communications, change of shipping plan including monitor changes, trace investigations and others shall also be recorded.

* * * * *

1[5]6. Part 73 is amended to change the term "industrial sabotage" to "radiological sabotage" wherever it appears.

17. Paragraph 73.50(c)(1) is amended to change the reference to "an NRC or ERDA personnel security clearance" to reference to "an NRC or United States Department of Energy access authorization."

1[7]8. Paragraph 73.71(a) is amended to change the reference to § 73.36(f) to reference § 73.27(c).

1[8]9. Paragraph 70.22(g) is amended to replace references "...§§ 73.30 through 73.36...." with reference to [Part 73:] §§ 73.20, 73.25, and 73.26.

20. Paragraph 70.22(h) is amended to delete reference to § 73.60 and add references to §§ 73.20, 73.45, and 73.46.

2[8]1. Paragraph 70.32(d) is amended to replace the reference to paragraph 73.30(e) with reference to [Part 73.] § 73.20(c).

2[1]2. Paragraph 70.32(e) is amended to replace the reference to paragraph (f) with reference to [Part 73.] § 73.20(c).

2[2]3. Paragraph 70.32(f) is deleted.

EFFECTIVE DATE: (120 days after publication in FR)

(Sec. 53, 161i, Pub. L. 83-703, 68 Stat. 948, Pub. Law 93-377, 88 Stat 475; Sec. 201, Pub. L. 93-438, 88 Stat. 1142-1243, Pub. Law 94-79, 89 Stat 413 (42 U.S.C. 2073, 2201, 5841).)

Dated at Washington, D.C. this _____ day of _____ 1979.

For the Nuclear Regulatory Commission.

_____
Samuel J. Chilk
Secretary of the Commission

ENCLOSURE B

ENCLOSURE "B"

PUBLIC COMMENT SUMMARY AND STAFF RESPONSE

1.0 Comments were received from eighteen organizations and individuals. These included comments of a general nature and comments which addressed specific sections and paragraphs of the proposed rule. Those of a general nature are summarized under the heading of Generic Issues while the remainder are categorized in the same order as the applicable sections and paragraphs of the rule. A code appears at the end of each summary which identifies those commenters who had similar or identical comments. Appendix A lists the commenters, their identification code, and the date their comments were received. Also, the commenters individual letters have been coded and cross-referenced and will be made available in the Public Document Room. Many of the comments were identical or similar to comments received during the first comment period and therefore had been previously answered. Such comments are identified as having been responded to previously.

2.0 Generic Issues

2.1 The Threat and General Performance Requirement

2.1.1 Comment Summary: Commenters again questioned the description and nature of the threat and the level of safeguards necessary to satisfy the general performance requirement. The views are summarized as follows:

a. Commenters felt that the level of safeguards proposed may be excessive. These views ranged from concern that the definition of the threat was too general and would allow the imposition of ever increasing requirements, to concern that the required subsystems and components of the physical protection system were excessive. There was concern that the general performance requirement might be impossible to enforce and that compliance will be too costly. (BWC2, AIF, WEC RI/ES, AGN)

b. One commenter stated that the threat was not useful unless it specified adversary numbers. (BWC2)

c. Commenters noted that a comprehensive evaluation of the rule was not possible without review of the guidance documentation. It was suggested that an additional comment period be allowed for the rule following publication of the guidance documentation. (NFS, BWC2)

d. Commenters suggested that the proposed rule be further reviewed, then tabled until there is a significant commercial activity involving special nuclear material to warrant the rule. (WEC, AIF)

e. One commenter felt the rule for transport was too weak. Use of federal forces was suggested. (NYS)

2.1.2 Response:

a. The original staff response to criticisms of the general performance requirement and postulated threat level

adequately answer these subsequent comments. Additional clarification was added by expanding the detail in the reference systems in Section 73.26 and 73.46 after the first round of comments. Additionally, publishing of extensive, detailed guidance documentation should further define the intent and application of the proposed rule.

b. This comment was responded to previously.

c. The Staff agrees that a comprehensive evaluation of rule implementation depends upon the nature of the guidance documentation. All interested parties will be allowed to comment on the guidance documentation itself, its relationship to the rule, or to provisions of the rule affected by the guidance. The comment period for the guidance documentation can be used for any of the above purposes without establishing an independent third comment period for the proposed rule changes.

d. The proposed rule has been published for public comment twice and thoroughly reviewed during a two-year period. The NRC staff considers this level of attention more than adequate when compared with past rulemaking experience. In addition, NRC considers the level of commercial activity sufficiently significant to warrant the upgrading of physical security requirements as well as updating the requirements to reflect the latest license conditions.

e. Responded to previously.

2.2 Value/Impact of Proposed Amendments

2.2.1 Comment Summary: There was general criticism that the cost of implementing the rule was not justified by the resultant increase in protection. Specifically, large operating costs for expanded guard forces and initial expense for expensive redundant security equipment were identified as too costly. (WEC, RI/ES, ENC, AGN)

2.2.2 Response: This general criticism was voiced earlier, and the same response applies, that no supporting details are given which would allow comparison to the value/impact analysis prepared by the staff.

2.3 Impact on Research and Test Reactors

2.3.1 Comment Summary: Commenters stated that exceptions should be made for research and test reactors and research and test fuel cycle facilities which are not presently operating. (NBS, ENC)

2.3.2 Response: (Previously responded to) The basic criterion for applicability of the rule is possession of a formula quantity of strategic special nuclear material which is not self-protecting. Therefore, most research facilities would not be covered.

2.4 Impact on Nuclear Power Reactors

2.4.1 Comment Summary: One commenter complained that the rule had not been properly identified as affecting nuclear power reactors. It was suggested that the changes to Section 73.55 be republished for comment so that affected reactor licensees would have a fair opportunity to respond. (DPC)

2.4.2 Response: Changes to Section 73.55 are not considered substantive and were made so that certain language in the proposed amendments would be identical to that in Section 73.55. No additional requirements are levied on nuclear power reactor licensees.

3.0 Specific Issues

3.1 Purpose and Scope (Section 73.1)

3.1.1 Comment Summary: One comment suggested including a qualifier, noting the rule is not intended to overrule the laws of any local jurisdiction. (RI/ES)

3.1.2 Response: In response to this comment, staff does not believe that such a qualifier is necessary. As suggested by the commenter the qualifier is too broad and would lead to much confusion because in those areas where the Atomic Energy Act authorizes specific requirements implementing regulations may supersede conflicting local laws. Local law is relied upon, however, to give added content to the use of force in response to a threat because there is no applicable Federal law.

3.2 Definitions (Section 73.2)

3.2.1 Comment Summary: Commenters requested or suggested additional clarification of definitions as follows:

a. Commenters stated that the definition of vital area was too general and that the concept of an enclosed space be included. (AIF, ENC)

Response:

a. the definition of vital area was changed to provide greater flexibility. As some vital areas may not be enclosed spaces, enclosed space should not be part of the definition.

Comment:

b. Commenters noted that the definition of vault should not use LLEA response as a criterion as it varies from site to site. It was also suggested that the delay responsibility of a vault should be assessed giving consideration to other parts of the protection system. (BWC2, AIF, UNC2, GEC)

Response:

b. The intent of the vault definition was to specify vault delay characteristics which will, at a minimum, match the anticipated time for security forces to respond to the vault location and prevent the removal of SSNM. The definition has been modified and additional criteria have been added to §73.46 to better specify the required delay characteristics of vaults.

Comment:

c. Comments suggested that the definition of radiological sabotage be changed to better define what is intended by "indirectly endanger" and explain why the rule deletes the exception to enemies of the U.S. (NFS, GPU, AIF, ENC, DPC)

Response:

c. The exception to enemies of the U.S. was deleted from the definition of radiological sabotage as it proved unnecessary. The exception still applies with respect to reactors, but is provided for in existing Part 10 Section 50.53. The intent of using the term "indirectly endanger" is to provide for acts which could contribute to, or be part of, a sequence of interrelated or interdependent events all of which taken together could directly endanger the public health and safety.

Comment:

d. One commenter suggested that "vital equipment" be redefined to reflect only that equipment whose loss would result in offsite radiation exposure above defined values. (ENC)

Response:

d. No change is considered necessary to the definition of vital equipment, as the suggested change fails to consider the importance of protecting against onsite radiation exposures.

Comment:

e. One commenter suggested that the definition of movement control center include the provision that it be continually manned. It was also suggested that the government establish and man such centers. (AIF)

Response:

e. No change is considered necessary to the definition of movement control center as the activities defined automatically require manning. As to the suggestion that the government establish and man such centers, the government does for transport of government material. The responsibility for providing appropriate protection for commercial shipments, to include the requirement for setting up and operating a movement control center, rests with the licensee.

Comment:

f. One commenter suggested deletion of the word "potentially" from the definition of force. (ENC)

Response:

f. The suggestion that "potentially" be removed from the definition of force is considered a good one and will be adopted. It is intended that other changes will be made to the definition of force to improve clarity and intent.

Comment:

g. It was suggested that the definitions for stealth and deceit be reworded to reflect that removal of unauthorized SSNM, rather than removal of any unauthorized materials, is the intent of the definition. (NFS)

Response:

g. The suggestion that the definitions for stealth and deceit be reworded to limit the intent to removal of unauthorized

SSNM is a good one and the definitions will be changed accordingly.

3.3 Revision of Requirements for Spent Fuel Storage (Sec. 73.50)

3.3.1 Comment Summary: One commenter noted that Section 73.50 requires a much more extensive revision than just the undesignated first paragraph, as the existing version applies to more than spent fuel facilities other than at a power reactor. Another commenter suggested changing the wording of the first paragraph so that only "licensees who possess, use or store" are affected, rather than "licensees who are authorized to possess, use, or store..." (NFS, BWCI)

3.3.2 Response: The proposed wording of the first paragraph of Section 73.50 specifically designates spent fuel facilities as the type of facility which would now be covered. It is intended that the subsequent parts of Section 73.50 sections, as they presently appear in the regulations, apply. The comment suggesting that the wording be changed from "licensees who are authorized to possess" to "licensee who possess" is a good one and the change will be made.

3.4 General Performance Requirements (Section 73.20)

3.4.1 Comment Summary: Commenters continued to show concern with the overall generality of this section. The meaning of the phrase "high assurance" was questioned and it was suggested that it be defined in Section 73.2. Concern was expressed that even with completed revisions, the explanation of the threat remains

ambiguous and requires further clarification. Suggestions included better

definitions of the upper level of conspiracy which must be protected against, specification of the size of an assault force, and the elimination of Section 73.20 altogether in favor of more detailed paragraphs Section 73.26 and Section 73.46. (RI/ES, TEC, ENC, BWC2, NFS)

3.4.2 Response: The design basis threat statements have been modified and "reasonable assurance" substituted for "high assurance."

3.5 Performance Capabilities for Material in Transit (Section 73.25)

3.5.1 Comment Summary: One commenter noted that the inclusion of the phrase "unless otherwise authorized by the Commission" could allow ratcheting without benefit of rulemaking. (TEC)

3.5.2 Response: The inclusion of the phrase "unless otherwise authorized by the Commission" could conceivably allow ratcheting. However, it also is necessary to allow the NRC decisionmaking flexibility for approving licensee proposed alternative measures which would meet the intent of the performance-oriented rule. Therefore, the phrase shall continue to be used.

3.6 Transportation System, Subsystems, and Procedures (Section 73.26)

3.6.1 Comment Summary: The views are summarized as follows:

a. One commenter expressed opposition to the requirement that material access authorizations be required, on the grounds that the material access authorization program is not constitutional. (DPC)

b. The same commenter also considered both the requirement for written approval of security procedures and the requirement for nine armed escorts to be excessive. (DPC)

c. Another commenter noted that there was an unstated assumption that trip routing would remain confidential until trips were completed. (DOE/SG)

d. One comment questioned whether or not "transfer points", as discussed in this section, included originating and destination facilities. (UNC2)

e. Another comment recommended that the paragraph dealing with shipment by sea be amended to allow the use of other than container ships (when container ships are not available), as long as the material is placed in a locked and sealed secure compartment. (WEC)

3.6.2 Response:

a. Whether or not material access authorizations will be required is the subject of a separate rulemaking. Ample opportunity, including the holding of public hearings, has been provided to solicit comments on such a requirement. The constitutionality of the requirement is adequately discussed in the background documentation involved with that rulemaking.

b. The concern that requirements for written approval of security procedures are excessive was answered previously. The number of escorts has been reduced from nine to seven.

c. The Commission is presently considering a separate rulemaking that would make such information classifiable as national security information.

d. Origination and destination facilities are not to be included within the scope of the definition of transfer points. Guidance will clarify this point.

e. Container ships are intended to be the standard for shipments of SSNM. If special circumstances should limit the availability of container ships, other arrangements could still be considered on a case-by-case basis.

3.7 Performance Capabilities for Fixed-Sites (Section 73.45)

3.7.1 Comment Summary: Commenters provided the following remarks:

a. Section 73.45(b)(1) and (2) were criticized as unclear. The use of the terms "stealth" and "deceit" in this section were described as open ended. It was suggested that the rule specify the events that are to be protected against. (WEC)

Response:

a. The Staff does not agree with these comments. Stealth and deceit are defined in Section 73.2 and hence are not open ended. Events to be protected against are adequately described in the threat characterization of Section 73.20.

Comment:

b. The use of the word "boundary" in Section 73.45(c) confused one commenter. It was suggested that boundary be defined

if meant to mean something different than physical barrier. Another commenter noted that the descriptions of required controls and procedures were too general and could cause both system design and inspection problems. Another comment stated that having these requirements apply to protected areas could severely and unnecessarily restrict activities in multiple-use facilities. (BWC2, ENC)

Response:

b. Boundary is used as it appears in the dictionary, as a limiting line or a border. A physical barrier may or may not be placed at a boundary. In regards to the criticism that Section 73.45 is too general, it is intended to provide a description of general capabilities. System design specifications are described in Section 73.46 and pending guidance documentation. As to the restricting of activities in multiple-use facilities, this could conceivably occur. However, to provide defense in depth, the contemplated PA requirements are necessary and will not be changed.

Comment:

c. Paragraph Section 73.45(d)(1)(iii) describes material control and accounting procedures and was identified as almost identical to existing Section 70.58(h). It was suggested that it be deleted. Additionally, a commenter noted that Section 73.45(d) implies a real time inventory system which

does not directly relate to the physical protection of material and hence is not required. (BWC2, RI/ES)

Response:

c. The similarity noted between existing Section 70.58 and proposed Section 73.45(d)(1)(iii) simply reflects the interface between material control and accounting and physical protection concerns. However, the sections differ in content. § 70.58(h) requires current knowledge of location of discrete items, the proposals are aimed at preventing unauthorized movement of material. This section is not intended to imply a real time inventory.

Comment:

d. One commenter suggested that review of a descriptive shipping document signed by a nuclear material control supervisor with signature properly verified should be sufficient to meet the requirement of Section 73.45(e)(2), that the identity and quantity of SSNM be confirmed. Another comment suggested that paragraph (e) was not required as it dealt with a material control and accounting concern rather than a physical protection concern. (RI/ES, UNC2)

Response:

d. The suggestion that review of a shipping document signed by a supervisor and properly verified be an acceptable means to satisfy the requirement of Section 73.45(e)(2) belongs in a discussion of evaluation or licensing criteria or in a

discussion of acceptable alternatives. Whether or not this or any other proposed alternative would be acceptable depends upon not only the specific procedure, but also upon the other components of the system which together meet the redundancy and diversity intent of the rule.

Comment:

e. One commenter believed the language of Section 73.45(f)(1)(i) and (ii) could be clearer if the wording required "permitting a response that would prevent a theft" rather than permitting "such a response that will prevent the penetration or prevent such penetration from resulting in theft". (ENC)

Response:

e. The suggested rewording is not considered to provide a significant difference.

Comment:

f. One commenter suggested that Section 73.45(g)(1)(ii) and (g)(2) were redundant and that (g)(2) could be deleted. Other comments suggested that the requirement "to impede" and "to assure" could not be met with absolute certainty and would better be stated as "attempt to impede" or something less than assure. (BWC2, ENC)

Response:

f. The subsections 73.45(g)(1)(ii) and (g)(2) provide for two separate capabilities and are not redundant. The first requires establishing the necessary organization and the

second requires planning a response action. The comment concerning the inability of the system to assure with absolute certainty is recognized. The total system or program is clearly stated to mean provide "reasonable" assurance, certainty is neither implied nor expected.

3.8 Fixed-Site Systems, Subsystems, & Procedures (Section 73.46)

3.8.1 Comment Summary: Comments were received from various commenters as follows:

a. Commenters suggested changes to paragraph 73.46(a). Comments recommended deletion of the phrase "but not necessarily limited to". It was also suggested that the last sentence be deleted, as existing section 73.5 serves the same purpose by allowing license exceptions. Another comment took exception to referencing "site specific conditions" in the second sentence and recommended deletion of the entire sentence. Another comment requested clarification as to whether or not the measures specified in this paragraph were expected to protect against both interim and long term threat levels. (NFS, BWC2, AIF, TEC)

Response:

a. The wording of this paragraph is specifically designed to allow the Commission flexibility in decisionmaking in allowing reasonable alternatives to the suggested reference design system specifications outlined in Section 73.46(b)-(h). The concept of requiring short and longer term implementation

against different threats has been dropped. The longer term period was to permit development of measures against insider collusion. The time involved in the second round of public comment eliminated this need for further delay.

Comment:

b.1. One commenter requested clarification of whether or not the individual who provides full-time, onsite direction, as stated in paragraph 73.46(b)(2), of the physical protection activities must be a member of security management.

Response:

b.1. The full-time onsite director described in Section 73.46 (b)(2) must be a member of the security organization, but need not be a member of security management.

Comment:

b.2. Another commenter noted that the requirement in paragraph 73.46(b)(4) for requalification of all security personnel at least every twelve months does not account for some occupational categories which may not need requalification in accordance with Appendix B, such as lock and key control personnel, badge fabricators, or investigators. It was also recommended that the time interval, "at least every twelve months", be changed to, "annually, with the period not to exceed 14 months."

Response:

b.2. Requalification of security personnel only applies to those specified as requiring annual requalification by Appendix B to Part 73. The suggestion to change the requalification time from 12 months to annually, with the period not to exceed 14 months, is not supported by any evidence to justify such a change. Lacking such evidence, or a documented hardship caused by the present time frame, this requirement will stand as is.

Comment:

b.3. A number of comments questioned the intent of paragraph 73.46(b)(5). All these comments requested further clarification of this requirement. (TEC, RI/ES, NFS, UNC2, BWC2, AIF, ENC, UNC1) (GEC)

Response:

b.3. The guidance will provide further clarification concerning intended security personnel control of the security system.

Comment:

c. Commenters suggested that isolation zone, as used in this section, be better defined to include a minimum distance specification. Another comment took issue with the requirement in paragraph 73.46 (c)(4) that the protected area be illuminated. It was claimed that illumination was a hazard as it made better targets of security forces. (AIF, BWC1, NFS)

Response:

c. The comments concerning physical barrier subsystems either stated that specifications were too vague, e.g. an isolation zone not defined by a minimum distance, or that certain sections were unclear. Certain specifications, such as isolation zone, are defined in terms of performance expected, rather than by a specific arbitrarily chosen distance, so that licensees can design this component in concert with local site variations. The staff recognizes that such definitions may seem initially confusing, but will prove more useful to licensees once they have seen the guidance. The comment claiming illumination of the PA may be hazardous to security forces is answered as follows. If properly installed and directed, illumination can be an advantage to the security force and be a deterrent to an adversary. The lack of illumination would create undo confusion and be an unacceptable alternative.

Comment Summary:

Comments related to paragraph Section 73.46(c)(5) are for the most part answered or clarified in the design guidance with the following exceptions: The comments concerning paragraph 73.46(c)(5) were as follows:

Comment:

c.1. Significant delay requires greater definition (ENC).

Response:

c.1. The guidance will further explain the meaning of significant delay.

Comment:

c.2. MAA barriers, rather than vault barriers, should delay penetration appropriate to the response time of the LLEA. (ENC)

Response:

c.2. Both vault and MAA barriers must provide significant delays if protection to SSNM stored in a vault is to be provided from the insider who has access to the MAA.

Comment:

c.3. It is not clear as to what requirements apply to fuel elements, alloys or fuel assemblies. (DOE/SG)

Response:

c.3. All requirements other than those specifically limited to SSNM other than alloyed or fuel elements or assemblies, as contained in §73.46(c)(5), would apply. Guidance will provide further clarification.

Comment:

c.4. The materials which could be used directly to manufacture a nuclear explosive device should be specified. (NFS) UNC1)

Response:

c.4. The staff does not believe that further specification of what constitutes materials which could be directly used to manufacture a nuclear explosive device is necessary in the rule.

Comment:

c.5. What is an acceptable penetration-resistant, tamper-indicating container? Must such containers be used when material is within a vault? If so, why? (NFS)(AIF)(BWC2)(UNC2)(DOE/SG)

Response:

c.5. After reconsideration, the staff finds the requirement for penetration-resistant, tamper-indicating containers to be unnecessary. The rule will be changed to eliminate the phrase "penetration resistant."

Comment:

c.6. What would be acceptable as "significant delay" to penetration? (NFS)

Response:

c.6. Significant delay is that delay which will prevent access to and theft of SSNM from occurring when considered in light of other site security system characteristics such as detection and communication capabilities and security force response time. Guidance will provide further clarification.

Comment:

c.7. The use of locked compartments or locked process equipment could adversely affect safety or production requirements. (NFS)

Response:

c.7. The requirement for locked compartments or process equipment applies to unattended production equipment and is a necessary

form of protection for unattended SSNM. However, safeguards requirements should never interfere with safety considerations, and in the case of a specific problem or conflict, some alternative measure would be considered on a case-by-case basis.

Comment:

c.8. One comment took issue with the elimination of approval for use of vault-type rooms as it was claimed that "the penetration power of explosives virtually negates the difference in barrier resistance" between the two. (DOE/SG)

Response:

c.8. The revised definition of vault eliminates the old distinctions between vault and vault-type room. The required degree of penetration resistance expected is explained in 73.46(c)(5)(i) and in detail in guidance documentation, including means to upgrade existing vault-type rooms.

Comment:

c.9. What is meant by "undergoing processing"? (BWC2)

Response:

c.9. A definition of undergoing processing will be added to §73.2 to reflect the intended differences between active processes and storage.

Comment:

c.10. Does the requirement for locked compartments and process equipment mean that all gloveports on a glove box require locks? (AIF)(BWC2)

Response:

c.10. The intent of this provision is to preclude direct access to normally unattended material in processing, hence glove ports would not require locks.

Comment:

c.11. Paragraph 73.46(c)(6) inadvertently includes scrap other than SSNM. It should be clarified so that only SSNM is addressed, such as could be done by changing "enriched uranium scrap" to "strategically enriched uranium scrap". (ENC, NFS)

Response:

c.11. The use of the phrase "enriched uranium scrap" is not intended to include other SSNM but only high enriched uranium. This will be clarified by adding the phrase "enriched to 20% or greater."

Comment:

d. Commenters offered the following remarks concerning paragraph 73.46(d):

d.1. Commenters suggested deleting the requirement that "badges shall be displayed" as it sometimes conflicts with health and safety practices which require the use of protective clothing. (AIF, BWC2)

Response:

d.1. Special measures may be necessary to meet health and safety practices in high contamination areas and will be discussed in detail in guidance documentation.

Comment:

d.2. One comment stated that equipment not specifically involved in the use, storage, or processing of SSNM may be required in MAA's and hence the last sentence of the undesignated second paragraph of 73.46(d) should delete the reference to "equipment used in . . . . " (WEC)

Response:

d.2. The last sentence of the undesignated second paragraph has been changed to allow maintenance activities. The intent of this sentence is to prohibit extraneous activities which could weaken or complicate access control of MAA's.

Comment:

d.3. A comment noted that the requirement for material access authorizations did not include unescorted access to protected areas (which is a requirement of the proposed access authorization rule) and questioned which rule governed. (ENC)

Response:

d.3. Both the proposed material access authorization rule and this proposed rule would require a material access authorization for unescorted access to PA's.

Comment:

d.4. One comment questioned the intent of the search function at access control points and whether or not the requirement was practical. (DOE/SG)

Response:

d.4. Search functions are intended to protect against the introduction of firearms, explosives, and incendiary devices or the unauthorized removal of SSNM from MAA's. Discussion of practicality will be included in guidance documentation.

Comment:

d.5. One commenter requested deletion of the requirement for badges to indicate area authorization and time limits of such authorization, as it would require badge redesign and employees require access to all such areas in any event. (UNCl)

Response:

d.5. The requirement for badges to indicate areas to which access is authorized is considered necessary, even if badge redesign is required. However, alternative procedures which accomplish the authorization intent of this paragraph would be considered.

Comment:

d.6. Another commenter requested that greater credit be given for material access authorizations. (RI/ES)

Response:

d.6. Material access authorizations are the subject of a separate rulemaking and will be considered in the overall system evaluation when that rulemaking has been completed.

Comment:

d.7. Commenters expressed confusion over the search requirements of paragraphs 73.46(d)(4)(7). They stated it was unclear as to who would be searched randomly and that the rationale for varying search requirements (some random, others not) was unclear. It was suggested that these requirements be clarified or deleted. There was confusion as to how the last access control point could remain "hardened" in protecting the person controlling access when a search would require that person leaving the confines of the protection. There also was a question of whether or not remote operated gates were intended by this section. Vehicle search requirements were criticized as ineffective. (UNC1, ENC, UNC2, AIF, BWC2)

Response:

d.7. The search requirements and rationale will be discussed in greater detail in the guidance documentation.

Comment:

d.8. It was noted that the escort requirements of paragraph 73.46(d)(8) and 73.46(d)(13) are inconsistent and contradict

each other. It was suggested that the less stringent requirement be followed. (WEC)

Response:

d.8. The escort requirements of Section 73.46(d)(8) and Section 73.46(d)(13) are not inconsistent. One deals with escort of vehicles other than designated licensed vehicles, the other with individuals not permitted to enter PA's without escort.

Comment:

d.9. Commenters criticized the requirements for two separate searches of personnel exiting MAA's and the necessity of using two search personnel who cannot have access to the MAA. The requirement for search personnel who do not have access was stated as unrealistic and would contribute to excessive personnel costs. It was suggested that a requirement disallowing individuals "who process" material from searching would serve the same purpose. Paragraph 73.46(d)(10), which requires that wastes be drum scanned and sealed by two individuals not having access to process or storage areas, was criticized as being excessive and as potentially requiring additional access controls within MAA's. Additionally, the decentralization involved was stated as creating additional vulnerabilities by increasing supervision and monitoring difficulties. (UNC2, UNC1, WEC, RI/ES, ENC, AIF, NFS)

Response:

d.9. The requirement for a second search of individuals exiting a material access area is intended to break up potential collusion paths between individuals who have normal access to SSNM and the member of the security organization responsible for the exit search function. This is the final line of defense in depth and is considered necessary in case the other elements (surveillance, work rules, etc.) fail or are compromised.

Because trash, wastes and other large objects leaving a material access area have the potential of masking unauthorized removals of SSNM, the staff believes that extraordinary search measures are warranted. Using individuals to conduct the exit search of these objects who have access to the SSNM and to trash or waste containers or other objects that pass through the MAA boundary amounts to a self search and cannot be considered an effective safeguard. However, use of personnel who have access to SSNM might be an acceptable alternative if the search is conducted by a team (rather than two individuals) whose composition has an element of randomness in its selection.

With respect to limiting the search to individuals who do not process material, it is noted that in certain facilities

individuals other than material processors often have access to SSNM in the course of their duties or by virtue of their authorized presence within the MAA.

These special search procedures and the separation of functions requirements contained in 73.46(d)(12) are indeed additional access controls that will probably result in increased demands on licensee supervision to monitor all phases of the material-processing operation. Essentially all the specific requirements in Section 73.46 for protection against conspiracies fall into the category of additional access control or increased monitoring.

Comment:

d.10. One comment suggested that paragraph 73.46(d)(12) apply to solid waste only. (NFS)

Response:

d.10. Wastes, whether solid or in other form, should be screened and packaged in areas other than processing or storage areas to minimize collusion paths. No compelling reason for this paragraph only applying to solid wastes was given.

Comment:

e. Comments on paragraph 73.46(e) areas follow:

e.1. One comment recommended deletion of the requirement for local alarms on protected area perimeter exits and

deletion of the requirement for visible alarms on all exits. (UNC1)

Response:

e.1. Deletion of local alarms on PA exits and visible alarms on all exits would remove a potentially significant detection and communication capability and is not considered desirable.

Comment:

e.2. Commenters noted that the requirement for three CCTV monitors in vaults and process areas containing unencapsulated or unalloyed materials is excessive and could be interpreted as requiring three alarm stations. (ENC, UNC1, AIF, BWC2, NFS, GEC)

Response:

e.2. The intent of the third monitor is to provide a degree of protection for unoccupied vaults containing the most significant material against collusion between the alarm station operators. The effectiveness of this measure has been reevaluated and the requirement has been modified.

Comment:

e.3. One comment suggested rewording paragraph 73.46(e)(3) to only require alarms to activate upon entry into an area instead of entry, movement, and exit. (NFS)

Response:

e.3. The wording to require alarm indication upon entry, movement, and exit is specifically designed to ensure that all designed

openings are alarmed and that some form of volumetric alarm is used to indicate human movement. Detection of entry alone is not considered sufficient.

Comment:

e.4. Commenters noted that duress alarms used by security patrols were not cost effective and could cause interference with computer controlled equipment in production areas and hence this requirement should be deleted. (UNC1, GEC)

Response:

e.4. Duress alarms causing interference with computer controlled production equipment could be due to a number of causes, most either installation or engineering weaknesses. Rather than solve such a site specific problem by deleting the requirement, it is suggested that the computer controlled equipment be shielded or duress alarm transmissions be changed. If a specific problem proved insoluble, an exception could be requested.

Comment:

e.5. A comment stated that the rule does not provide adequate guidance for the design of an emergency power supply. (BWC2)

Response:

e.5. Guidance for design of backup power supplies is contained in the guidance documentation.

Comment:

e.6. Some confusion was expressed concerning the meaning of annunciation in the alarm station. The question was raised as to whether or not a real-time graphic display panel was required. (BWC2)

Response:

e.6. A real time graphic display is not specifically required by this section, further guidance on annunciation design will be contained in the guidance documentation.

Comment:

e.7. Paragraph 73.46(e)(8) requires monitoring of exterior areas within the protected area. The intent of this section was not clear to one commenter who requested a definition of monitor. (BWC2)

Response:

e.7. This will be clarified in the guidance.

Comment:

e.8. It was suggested that the "two man" rule be acceptable to meet the requirement of paragraph 73.46(e)(9). (UNC1)

Response:

e.8. The use of the two-man concept will be considered acceptable in meeting the intent of paragraph 73.46(e)(9).

Comment:

f. A commenter noted that the use of the word subsystem is not consistent throughout the rule and that it should be better

defined. Another commenter suggested adding the phrase "in turn" to paragraph 73.46(f)(1) between "(e)(5) of this section, who . . . ." and "should be capable". Another comment claimed that portable radio transmitters, as required, cannot be used in many production areas due to the interference it causes with computer controlled equipment. (BNC2, UNC1)

Response:

f. The interrelationships intended between system, subsystem, and other levels of protection will be further clarified in the design guidance. The problem of interference of portable radio transmitters with computer controlled equipment was answered under the duress alarm response.

Comment:

g. One commenter noted that the requirement for independent review of the security program every twelve months could probably be more helpful and less wasteful of management time if restricted to programs which have shown signs of being less than satisfactory. The requirement "to maintain . . . in operable condition" was criticized as impossible. It was suggested the words "or repaired expeditiously" be added to §73.46(g)(5) first sentence. Commenters questioned the advisability of requiring two individuals to complete all repairs. It was noted that simple, non-critical repairs be excluded or the requirement be changed to require test

and inspection by two individuals instead. A last comment suggested that "skilled" rather than "trained" maintenance individuals be required. (DOE/SG, BWC2, AIF, ENC, UNC2)

Response:

g. The conduct of the annual security program review is left up to the discretion of licensee management as long as all elements described in §73.46(g)(6) are covered. An acceptable procedure would be for the licensee to identify, during the first stages of the review, problem areas. These could then be targeted for a more rigorous audit than other elements of the security system.

The intent of having two individuals working as a team performing maintenance on the security system is to preclude compromise of the system by a single insider. Performance verification after the maintenance has been completed is only a partial solution since other portions of the system could be altered at the same time without the knowledge of the security organization.

With respect to the qualifications of the maintenance team, the staff believes than an individual who has been trained in the operation and performance of the security equipment would acquire the necessary skill during the training period. On the contrary, an individual who has a general skill in

security equipment but no knowledge of a specific system could not be depended on to assure that only authorized services have been performed. Of the two, trained is the better word. The requirement in §73.46(g)(5) for maintaining the security system in operable condition is intended to assure that adequate resources are committed to both preventive maintenance and timely repair. The possibility of single mode failure of security equipment is recognized by the remaining text of this paragraph. No change is considered necessary.

Comment:

h. Commenters expressed confusion concerning the response force requirements of paragraph 73.46(h). One comment questioned whether or not response personnel must be solely dedicated to a response function. Another asked if five guards were required to respond to each alarm. One comment questioned whether or not alarm station operators were counted as part of the minimum of five required guards. Another comment noted that the requirement for additional response forces (over and above the minimum five) is excessive since LLEA support is available. Another comment stated that no minimum response force should be required. One comment on allowing optional response methods suggested that external CCTV surveillance of vault walls should serve to meet the requirement of paragraphs 73.46(h)(7)(8). (BWC2, AIF, UNC1, ENC, RI/ES, GEC)

Response:

h. Guards and armed response personnel can have other duties so long as such duties do not interfere with their response to a safeguards contingency. Normally it is expected that the response force would be made up of guards who have routine duties other than response, other members of the licensee's organization who are qualified and trained in accordance with Appendix B, and guards from the licensee's organization who may be located at a facility that is adjacent to the protected area. Alarm station operators have continuing duties in case of an assault and are not considered to be part of the response force.

The requirements for alarm assessment vary depending on the location of the source. Alarms occurring within unoccupied vaults and material access areas that contain unalloyed or unencapsulated SSNM are to be assessed by at least two security personnel using remote means. Alarms in other material access areas are to be assessed by at least two security personnel working as a team in the area. Alarms initiated at the perimeter barrier or in the isolation zone are to be assessed by CCTV or other means that reduce the exposure of the responding personnel to ambush. Once it has been determined that a penetration or attempted penetration has occurred, the actual response should be sufficient

to neutralize the intruders and may include both the five guards and members of the reserve force.

Considering the violent nature of the threat described in Section 73.20, the staff believes that a force of at least five armed persons is necessary to provide for initial engagement and containment.

Provision for an additional response force (over and above the five guards) is necessary to insure that resources are available to counter multiple intrusions or diversionary tactics and attrition of the primary response force during the period before the arrival of local law enforcement.

External surveillance of vault walls could be an acceptable alternate to the requirements of Section 73.46(h)(7) if it includes methods to detect penetration thru the floor and ceiling. With respect to large processing material access areas, external surveillance may not be effective.

3.9 Requirements for Power Reactors (Section 73.55)

3.9.1 Comment Summary: Commenters noted the following:

a. It was suggested that "but not necessarily limited to" be removed from paragraph 73.55(a)(2). (TEC)

Response:

a. "But not necessarily limited to" provides for flexibility in assuring adequate protection on a site-by-site basis, no compelling reason for deleting it was expressed.

Comment:

b. One comment requested the justification for changing "industrial" to "radiological" sabotage. (TEC)

Response:

b. This comment was previously responded to.

Comment:

c. One comment suggested that the requirement for approval of procedures and revisions (as in paragraph 73.55(b)(3)(ii)) by the individual with overall responsibility for security be changed to allow the responsibility to be delegated. (FPL)

Response:

c. This requirements does not prohibit delegation of responsibility, hence no change is considered necessary.

Comment:

d. One commenter claimed that the requirement for demonstration of ability by security personnel is not justified and too costly. It was recommended that it be deleted. Another commenter recommended restricting the authority to ask for such demonstration to inspectors and to reasonable times. (GPU, FPL)

Response:

d. The requirement for demonstration of ability by security personnel is crucial to the Commission's being assured that security personnel are capable of performing assigned functions. In the absence of any reasonable alternative method to provide some assurance that such an important part of the physical protection program will function effectively, this provision will remain.

Comment:

e. The requirement for annual independent review of the security program was questioned. The time interval was questioned (24 months was suggested), the content of such a review was not clear, and whether the review could or could not be performed by company employees was questioned. (DPC, FPL, GPU)

Response:

e. The Staff believes the statement defining independent review is sufficiently clear. It states "independent of both security management and security supervision". Such review conducted by company or corporate management other than security management would be acceptable according to this language. No justification was given for doubling the time interval, therefore the twelve month interval has been retained.

Comment:

f. One commenter noted an apparent inconsistency in that paragraph 73.46(b)(6) requires random search of packages while 73.55 requires a search of all packages. (TEC)

Response:

f. There is not an inconsistency. As sabotage is the primary threat at power reactors, searching of incoming material to assure that sabotage aids are not introduced must be accomplished on a greater than partial basis, hence the requirement that all packages be searched. At fuel cycle facilities, theft is the major threat, with sabotage a secondary concern, the consequences of sabotage at a fuel cycle facility are considered to be less than at a power reactor. The search requirement for incoming packages is less stringent.

Comment:

g. Commenters expressed concern with the requirement for guards to interpose themselves between adversaries and vital and material access areas. It was claimed that such a requirement could unnecessarily endanger security personnel in that other actions may be more effective and that tactical decisionmaking must reside with the onsite supervisor. It was also suggested that this action specifically refer to theft of nuclear material and radiological sabotage. (GPU)

Response:

g. The requirement that guards interpose themselves has been a part of existing regulations (10 CFR 73.50(g)(2)) since January, 1978. Whether or not this requirement could unnecessarily endanger security personnel depends upon a number of factors, primarily local response and training plans and guard experience and judgment as applied to a given situation. This does allow a large degree of tactical decisionmaking on the part of onsite personnel and particularly recognizes that security personnel faced with a threatening situation must use their own judgment in fulfilling their responsibilities and in protecting themselves. In answer to the second part of the comment, the requirement does specifically refer to theft of SNM or radiological sabotage.

SAFEGUARDS UPGRADE RULE

LIST OF COMMENTERS

NO.	COMMENTERS	ID CODE	DATE RECEIVED
1	Babcock & Wilcox Company, R&D Division	BWC1	09/05/78
2	Exxon Nuclear Company, Inc. R&T Center	ENC	09/25/78
3	United Nuclear Corporation	UNC1	09/27/78
4	Atomic Industrial Forum, Inc.	AIF	09/27/78
5	Babcock & Wilcox Company, Nuclear Materials Div	BWC2	09/27/78
6	GPU Service Corporation	GPU	09/27/78
7	U.S. Department of Energy, Office SG & Security	DOE/SG	09/27/78
8	Nuclear Fuel Services, Inc.	NFS	09/27/78
9	Westinghouse Electric Corp., Water Reactor Div.	WEC	09/27/78
10	National Bureau of Standards, Reactor Rad. Div.	NBS	09/27/78
11	Florida Power and Light Company	FPL	09/27/78
12	Rockwell International, Energy Systems Group	RI/ES	10/04/78
13	United Nuclear Corporation, Fuel Recovery Opn.	UNC2	10/04/78
14	Toledo Edison Company	TEC	10/04/78
15	Duke Power Company	DPC	10/04/78
16	Allied General Nuclear Services	AGN	10/04/78
17	New York State	NYS	10/26/78
18	General Electric	GEC	11/01/78

ENCLOSURE C

ENCLOSURE C

REPORT JUSTIFICATION
PHYSICAL PROTECTION OF PLANTS AND MATERIALS

Proposed Amendments to 10 CFR Part 73 - Strengthened Physical Protection Requirements for Fuel Cycle Facilities and Transportation Involving Formula Quantities of Strategic Special Nuclear Material - (Short Title - Safeguards Upgrade Rule)

A. Need for the Report

Proposed amendments to 10 CFR Part 73, 42 FR 34310, July 5, 1977, and 43 FR 35321, August 9, 1978, commonly referred to as the upgrade rule, propose that fuel cycle licensees, and licensees involved in the transportation of certain quantities of strategic special nuclear material (SSNM) upgrade their physical security requirements to prevent theft with high assurance and to protect against radiological sabotage by the defined threat.

These proposed amendments included requirements for general performance to protect against adversaries as defined in the regulation. They also included a generic safeguards reference system for fixed site and transportation physical protection which provides the capabilities to meet the general requirements.

The proposed amendments are in the interest of national security to assure protection of public health and safety and are for the purpose of protection against theft of formula quantities of strategic special nuclear material.

The proposed regulations were the result of two studies, the Security Agency Study and a Joint Energy Research and Development Administration/Nuclear Regulatory Commission (ERDA/NRC) Task Force Study. The Security Agency Study concluded that creation of a Federal guard force for maintaining security in the nuclear industry would not result in a higher degree of guard force effectiveness than can be achieved by the use of private guards properly qualified, trained and certified. The ERDA/NRC task force was formed to propose a plan of action for improving the controls and protection of nuclear materials at NRC licensed fuel cycle facilities. The task force report,[1] addressed the current status of future direction of physical security protection at NRC licensed fuel cycle facilities now in possession of certain quantities of special nuclear materials.

These two studies included conclusions and recommendations which provide a basis for the NRC's determination that safeguards at

[1]Joint ERDA-NRC Task Force on Safeguards evaluations of (V). Final Report, July 1976, NUREG-0095, ERDA 77-34.

certain existing fuel cycle facilities, power reactors and transportation requirements should be improved and upgraded.

B. Cost, Burden or Benefit to Respondents, the Public and/or NRC

1. NRC Operating

Upgraded licensee physical security measures will provide assurance to the NRC and the public, that the security afforded is adequate to protect this material against threats having characteristics greater than currently considered.

The direct impact on NRC will be the costs associated with the effort expended to perform reviews and evaluations of revisions to the existing physical security programs. Currently, it is estimated that there are 14 physical protection plans (Annex I, page 22) which will have to be revised. Twelve for fixed site fuel cycle facilities and two for the protection of SSNM in transit. It is estimated that an average of approximately 6 man-months will be expended by NRC to review each revised plan. Assuming an estimated average NRC licensing review cost per man-month excluding any overhead of $2,800, the total cost for review of these revisions is estimated at about $235,200.

It is further estimated that 2 man-months per year per licensee or 28 man-months per year will be expended by the NRC to review subsequent revisions to the plans to make them acceptable. The costs for this review is estimated at $78,400.

NRC physical security inspections are currently programmed by Regional Officers of the NRC Office of Inspection and Enforcement. The revised security plans will not require any additional inspection effort by the NRC.

2. Other Government Agencies

The increased level of physical protection that will exist at fuel cycle facilities and during transportation will enable licensees to deter, detect, delay and contain a more significant spectrum of adversary capabilities. This will provide the licensee with a security system and response forces which could more fully cope with threats below the level specified in the regulation. However, it is expected that the security posture that will be developed to cope with the threat levels specified in the regulation will continue to rely on local law enforcement and other Federal agencies and that the present involvement of such agencies in providing protection will continue at the current level or increase.

Since most of the facilities being affected are processing government owned material under the cognizance of the Department of Energy and the Department of Defense, a major portion of cost will revert to these Departments. No additional effect is anticipated or required with regard to material protection amendments of the proposed rule.

3. Industry

The major impact on the licensees will be the capital and annual costs associated with the additional security personnel and hardware requirements and the preparation of revised security plans.

Tne total additional cost associated with upgrading physical security at fixed sites has been computed to be $8,579,000 capital investment cost and $6,470,000 in recurring annual cost. These average $780,000 (capital) and $588,000 (annual) per facility. It is estimated that this represents increases over present expenditures of 197% capital and 87% annual costs.

The total additional cost associated with upgrading transportation physical security for 20 shipments per year is estimated at $48,000 (capital) and $68,000 (annual). It is

estimated that this represents an increase over present estimated expenditures of 39% capital cost and 83% annual cost.

In addition to the capital and recurring annual cost, licensees will be required to pay license amendment fees for review and approval of the plans by the NRC. These fees amount to:

Average fee per Materials Licensee	$ 9,950
Average fee per Facility Licensee	$ 2,666
Total for fixed site plans	$108,000*

*The question of transportation plan fees is presently under review, it has not as yet been determined whether or not fees will be assessed.

10 CFR Part 73, Section 73.20 after publication in effective form, will require each licensee (who is authorized to operate a fuel reprocessing plant, possesses or uses formula quantities of strategic special nuclear material, or is authorized to transport or deliver to a carrier for transportation or takes delivery) to establish and maintain a physical protection system which will prevent, with high assurance, theft of strategic special nuclear material and protect against radiological sabotage. These licensees will be given:

a. 150 days (five months) to submit a revised fixed site safeguards physical protection plan and, if appropriate, a revised safeguards transportation protection plan.

b. 360 days (one year), or 90 days (three months) after NRC approval, to implement the approved plan, except

c. 540 days (one and one half years), or 180 days (six months) after NRC approval will be given for certain activities involving new construction, significant physical modification of existing structures, or major equipment installation.

The safeguards modified security plans are to be submitted to the Commission for approval. After the plan is approved there are no requirements for additional reports on the plan provided it is not changed. If it is changed, the licensee must obtain approval of the change in advance if the change decreases the safeguards effectiveness of the plan, and, if the change does not decrease the safeguards effectiveness, the licensee must submit a report containing a description of each change within two months after the change is made. It is estimated that the changes that have to be submitted to the NRC will be minimal.

Specific Recordkeeping and Reporting Requirements Imposed by the Proposed Changes to 10 CFR Part 73.

a. § 73.26 - Transportation Physical Protection Systems, Subsystems, Components, and Procedures

1. § 73.26(b) - Planning and scheduling

(a) § 73.26(b)(3) - Licensees shall confirm and log the arrival at the final destination of each shipment in the series before releasing the subsequent shipment.

(b) § 73.26(b)(4) - Each shipment(s) shall be approved by NRC prior to the time for the seven-day notice required by § 73.72.

2. § 73.26(d) - Security organization

(a) § 73.26(d)(3)(i) - Written security procedures which document the structure of the transportation security organization and detail duties of drivers and escorts and others responsible for security shall be recorded.

3. § 73.26(e) - Contingeny and response plans and procedures.

(a) § 73.26(e)(1) - Licensees shall establish, maintain, and follow a safeguards contingency plan for dealing

with threats, thefts, and sabotage related to strategic SNM in transit.

4. § 73.26(h) - Test and maintenance programs

   (a) § 73.26(h)(6) - The results of the review and audit with recommendations of the security transportation program shall be documented and kept available for inspection for a period of 5 years.

5. § 73.26(i) - Shipment by road

   (a) § 73.26(i)(6) - Notification shall be made to law enforcement authorities and the appropriate Regional Office of the NRC Office of Inspection and Enforcement in the event the radio telephone communications to the movement control center are not received as required at least every half hour from cargo and/or escort vehicles and the appropriate contingency plan initiated.

6. § 73.26(k) - Shipment by rail

   (a) § 73.26(k)(4) - See 5.(a). above. Same requirement, but for rail shipments.

b. § 73.27 - Notification Requirements

1. § 73.27(b) - Four reports are required, as follows:

(a) A report notification, upon arrival at the destination, of the material receipt by the licensee who delivered the material to the carrier for transport and notification to the NRC Regional Office of Inspection and Enforcement, and

(b) When a DOE license-exempt contractor is the consignee, the consignor shall notify the NRC Regional Office.

(c) If the shipment fails to arrive at its destination at the estimated time, or in the case of an export shipment, the licensee who exported the shipment, shall notify the NRC Regional Office and the licensee or other person who delivered the material to a carrier for transport.

(d) If the shipment fails to arrive the licensee who made the physical protection arrangements shall also notify the NRC Regional Office.

2. § 73.27(c) - Licensees who make arrangements for physical protection of a shipment of formula quantities of strategic

SNM shall, after the estimated arrival time, conduct a trace investigation of any shipment that is lost or unaccounted for and file a report with the Commission. Also, if the licensee who conducts the trace is not a consignee, he shall also immediately report the results of his investigation to the consignee.

c. § 73.46 - Fixed Site Physical Protection Systems, Subsystems, Elements, Components, and Procedures

1. § 73.46(b) Security organization

(a) § 73.46(b)(1) - If a contractor guard force is used, the licensees written agreement will show that the NRC may inspect and take away the copies of documents required to be kept.

(b) § 73.46(b)(3)(i) - There shall be written security procedures which document the structure of the security organization which detail duties of guards, watchmen and other individuals responsible for security.

2. § 73.46(d) - Access control

(a) § 73.46(d)(13) - Individuals not permitted by the licensee to enter protected area without

escort shall be required to register name, date, time, purpose of visit, employment affiliation, citizenship, and name of the individual to be visited.

3. § 73.46(g) - Test and maintenance programs

   (a) § 73.46(g)(6) - The fixed site licensees' security program shall be reviewed at least every 12 months and the results of the review, audit and evaluation of the effectiveness of the physical protection system shall be documented and reported to the licensee's plant management and to corporate management at least one level higher than that having responsibility for the day-to-day plant operation. These reports shall be kept available at the plant for inspection for a period of five years.

4. § 73.46(h) - Contingency and response plans and procedures

   (a) § 73.46(h)(1) - Fixed site licensees shall have a safeguards contingency plan for dealing with threats, thefts and radiological sabotage.

(b) § 73.46(h)(2) - Fixed site licensees shall establish and document response arrangements that have been made with local law enforcement authorities.

d. § 73.55 - Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors Against Radiological Sabotage

1. § 73.55(g) - Testing and maintenance

(a) § 73.55(g)(4) - The nuclear power reactor security program shall be reviewed at least every 12 months and the results of the review, audit and evaluation along with recommendations for corrections and improvements, if any, shall be documented, reported to the licensee plant management and corporate management at least one level higher than that having responsibility for the day-to-day plant operation. The report shall be kept available at the plant for inspection for a period of five years.

e. Tables A and B (Annex II, pages 23 and 24) indicate the estimated man-hours per reporting amendment

requirement expected as a result of the proposed amendment. No man years are stated for the increased guard force required by the rule change.

4. Public

The public will benefit from the fact that the nuclear industry will be protected with higher assurance against malevolent acts.

There is no direct cost impact to the public since, with the negligible exception of activities supporting the Ft. St. Vrain reactor, material being protected is not being used in the production of commercial electricity.

D. Decision on the Action

A decision to require upgraded physical security measures through rulemaking is consistent with the previous Commission decision that emergency action to increase protection was not required. It is also consistent with the stated intention of the Commission to initiate a program of upgrading the protection of SNM against theft and nuclear plants against sabotage. It responds to the recommendation by the Joint ERDA-NRC Task Force on Safeguards to

provide certain quantities of SNM with a higher level of protection. The rulemaking action to upgrade safeguards physical protection systems should proceed as planned.

E. Technical Alternatives

An evaluation of the impact to upgrade the physical security system at 12 fuel cycle facilities and SSNM in transit has been considered. Because of their diverse nature, each of these fuel cycle facilities and the two transportation companies were evaluated as to additional performance capabilities required and a judgment made as to the personnel (guards) and hardware systems needed to improve the physical security posture to the required level. This method of evaluation is based on one of several technical approaches which would meet the regulation. Other technical approaches may be proposed and found to be acceptable. The structure of the regulation, i.e., performance capabilities, permits this latitude to the licensee so long as the overall capability is in accordance with the required level of performance. Systems which may be proposed by licensees which are acceptable may result in the same or greater value, i.e., the system would provide the level of protection and may be less expensive than the system considered by the NRC staff. The alternative systems could therefore be greater and accordingly would continue to be acceptable.

F. Procedural Approach

1. The procedural approach to upgrade the physical protection of plants and materials can be accomplished by any of the following methods:

   a. Performance oriented regulation only.

   b. A regulation which includes general performance requirements for the capabilities necessary to protect against adversaries plus a generic safeguards system that normally would provide those capabilities.

   c. Specific system type regulation only.

   d. License conditions.

2. Performance oriented regulations could take the form of statements such as:

   a. The licensee will provide a physical protection capability to neutralize a specified threat or

   b. To prevent with high assurance, theft of strategic special nuclear material and to protect against

radiological sabotage, for fixed sites and special nuclear material in transit safeguards must assure the licensee's capabilities to:

i. Prevent unauthorized access of personnel, material and vehicles into Material Access Areas and Vital Areas

ii. Permit only authorized activities and conditions within Protected Areas, Vital Areas and Material Access Areas

iii. . . . . Three more capabilities -- see proposed

iv. . . . . section 73.45, 42 FR 34317, July 5, 1977

v. . . . .

These capabilities must meet the general performance requirements of section 73.20.

The first statement (a) gives the licensee the widest latitude as to the type of physical security system to propose and therefore provides the licensee with the

option of designing an optimum system for a particular site. It lacks definition, however, as to the specific performance capabilities that should be considered by the licensee to assure meetings and the general performance capabilities that are required, and this could lead to disputes between the licensee and the NRC as to the regulation.

The second statement (b) also gives the licensee a wide latitude as to the type of physical security system to propose, but in addition, channels the system design into the fulfillment of certain specific performance capabilities. While this provides more criteria for system design, there could still be misunderstandings with regard to performance capability requirements of specific systems.

2. A regulation requiring a general performance capability as well as some specific systems whereby this general performance capability is met, provides the optimum means of upgrading licensee protection of plants and material. Licensee options in the design of systems are allowed. At the same time, the inclusion of the specific systems in the regulations assures the public that licensee systems meet a set of individual performance criteria. Review of proposals

is also simplified since acceptance of licensee options is made only if the capabilities provided are equally effective.

3. System requirements alone, while being explicit in the detail design, does not provide the desirable degree of flexibility and would not allow other equally or more cost effective systems or subsystems.

4. The changes to the licensee physical protection programs to upgrade them at fuel cycle facilities and in transit represent such a magnitude that to implement them by license conditions would be subject to legal dispute by licensees. Moreover, this method of implementation would not be in accordance with the process of public rule making.

G. Decision on Procedural Approach

Issuance of both performance oriented and reference system requirements (alternative 2) is the preferred approach and should be implemented for the upgrade rule. This will provide the licensee latitude to submit a cost effective site oriented physical security plan while providing a basis for comparison of a performance oriented physical security plan to specific requirements for capabilities.

H. Statutory Consideration - NRC Authority

At the Federal level the Energy Reorganization Act of 1974, section 204(b)(1) allots to the NRC the Atomic Energy Act authority for the "provision and maintenance of safeguards against threats, thefts, and sabotage of ... licensed facilities, and materials."

The Atomic Energy Act of 1954, as amended, provides ample authority for the Commission to require licensees to upgrade the existing physical security requirements.

I. Relationship to Other Existing or Proposed Regulations or Policies

There are no apparent potential conflicts or overlaps with other agencies. The Department of Energy is implementing a similar upgrading of physical security at their contractor facilities and in transportation. Completion of this upgrading program is scheduled for the end of FY 78. Issues dealing with Federal, State and local laws, and the interface of international laws on export/import shipments are discussed in the statement of consideration (Enclosure A, the Federal Register notice contained in SECY-78-195). The interface of the proposed regulation with respect to other safeguards activities within NRC is discussed in the staff paper forwarding this action to the Commission.

J. Summary and Conclusions

Proposed amendments to the regulations (10 CFR Part 73) should be provided to upgrade the physical security afforded to certain quantities of a class of special nuclear material at fixed sites and while in transit and of plants in which these quantities are used. The incremental value obtained from these improvements, i.e., protection against an increased threat level, outweighs the resulting incremental impact. To provide the option to be flexible in the design of the physical security system and provide an enforceable regulatory framework, the amendments should encompass both general and specific requirements.

References

1. Joint ERDA-NRC Task Force on Safeguards (U), Final Report, July 1976, NUREG 0095, ERDA 77-34.

ANNEX I

EXISTING PHYSICAL SECURITY PLANS FILED WITH THE NRC

A. Transportation Physical Protection Licensees

1. Transnuclear, Inc., White Plains, NY
2. Tri-State Motor Transit Co., Joplin, MO

B. Fixed Sites Fuel Cycle Licensees

1. Babcock and Wilcox, Apollo, PA
2. Babcock and Wilcox, Leechburg, PA
3. Babcock and Wilcox, Lynchburg, VA
4. Exxon Nuclear Co., Richland, WA
5. General Atomic Co., San Diego, CA
6. General Electric Co., Vallicetos, CA
7. Nuclear Fuel Services, Inc., Erwin, TN
8. Rockwell International, Canoga Park, CA
9. Texas Instruments, Attleboro, MA
10. United Nuclear, Corp., Uncasville, CT
11. United Nuclear, Corp., Wood River Junction, RI
12. Westinghouse Electric, Corp., Cheswick, PA

ANNEX II

SAFEGUARDS UPGRADE AMENDMENT ESTIMATED REPORTING BURDEN

(N.B., no estimated burden is stated for the general requirement in §§ 73.20 and 73.25, to submit a revised safeguards transportation protection plan, since the specifics or segments of the requirement are contained in §§ 73.26 and 73.27.)

A. Transportation Physical Protection

	§	Requirements	Estimated Man/Hrs. Days or Mos.	No. of Licensees	Estimated Frequency	Total Estimated Annual Man/est.
1.	73.26(b)(3)	Log Shipment	1/20 Man/hr.	2	20	2 Man/hrs.
2.	73.26(b)(4)	NRC Approve Ship.	2 Man/hrs.	2	20	1/2 Man/month
3.	73.26(b)(3)(i)	Sec. Proc.	1/4 Man/hr.	2	20	10 Man/hrs.
4.	73.26(e)(1)	Contingent Plan	4 Man/months	2	1	8 Man/hrs.
5.	73.26(h)(6)	Results of Reviews	2 Man/hrs.	2	1	4 Man/hrs.
6.	73.26(i)(6)	Notification to LLEA	1 Man/hr.	2	1	2 Man/hrs.
7.	73.26(k)(4)	Notification to LLEA	1 Man/hr.	2	1	2 Man/hrs.
8.	73.27(b)	Notification - Shipment Arrival	1/4 Man/hr.	2	20	10 Man/hrs.
9.	73.27(b)	Notification - NRC Office	1/4 Man/hr.	2	10	5 Man/hrs.
10.	73.27(b)	Notification - Shipment Not Arriving or Export	1/4 Man/hr.	2	5	2 1/2 Man/hrs.
11.	73.27(b)	Notification - Shipment Not Arriving	1/4 Man/hr.	2	1	1/2 Man/hr.
12.	73.27(c)	Trace Investigation	3 Man/days	2	1	6 Man/days
					Total	10 1/2 man/months and 6 man/hrs.

SAFEGUARDS UPGRADE AMENDMENT ESTIMATED REPORTING BURDEN

(N.B., no estimated burden is stated for the general requirements in §§ 73.20 and 73.45, to submit a revised safeguards fixed site protection plan, since the specifics or segments of the requirements are contained in §§ 73.46 and 73.55.)

B. Fixed Site Physical Protection

	§	Requirements	Estimated Man/Hrs.Days or Mos.	No. of Licensees	Estimated Frequency	Total Estimated Annual Man/est.
1.	73.46(b)(1)	Contractor Written Requirement	1 Man/day	12	1	12 Man/days
2.	73.46(b)(3)(i)	Written Sec. Proc.	6 Man/months	12	1	12 Man/months
3.	73.46(d)(13)	Sign. In Of People Escorted	5 Man/minutes	12	500	3 Man/months and 1 Man/day
4.	73.55(g)(4)	Reactor System Review	2 Man/wks.	12	1	6 Man/months
5.	73.46(g)(16)	Lic. System Review	2 Man/wks.	12	1	6 Man/months
6.	73.46(h)(2)	Response to LLEA	3 Man/days	12	1	7 Man/month and 1 man/day
7.	73.46(k)(7)	Contingency Plan	4 Man/months	12	1	4 Man/yrs.
					Total	7 Man/yrs and 4 man/days

ENCLOSURE D

ENCLOSURE "D"

FURTHER UPGRADING OF PROTECTIVE MEASURES FOR
NUCLEAR MATERIALS ADOPTED BY NRC

The Nuclear Regulatory Commission is amending its regulations to upgrade its requirements for protecting strategic quantities of highly enriched uranium and plutonium. The improved program affects companies licensed to fabricate nuclear fuel and conduct scrap recovery operations, and organizations which transport the materials.

The changes being adopted are part of an overall effort to upgrade protection on a systematic and continuing basis. They further strengthen NRC requirements in effect since late 1973 for fuel cycle facilities and transportation activities and supplemented since that time by conditions added to individual NRC licenses.

The requirements include general performance requirements to protect against the following:

(1) a determined violent external assault, by stealth, or deceptive actions by a small group which is well trained (including military training and skills) and dedicated; these persons could have the assistance of a knowledgeable insider and be armed with automatic weapons equipped with silencers; they also could have incapacitating agents and explosives to gain entry or otherwise destroy plant or transport integrity and the ability to operate as two or more teams;

(2) acts of theft or sabotage by an insider, including an employee; and

(3) a conspiracy of insiders or employees in any position.

The new regulations reflect the inherent differences in protecting nuclear materials at fixed facilities and during transportation.

Licensees operating fixed facilities such as nuclear fuel manufacturing plants are required to assure that only authorized personnel, materials and vehicles are admitted to areas housing strategic nuclear materials and to other areas designated as protected or vital areas; to provide controls on movement or placement of nuclear materials; and to assure that any breach or attempted breach of security is detected and a response is made.

More detailed measures for various aspects of security plans, such as the security organization, communications and alarm systems, barriers, detection systems, access controls and response plans also are included in the regulations.

New requirements for protecting important quantities of special nuclear material (high-enriched uranium-235, uranium-233 and plutonium) during transportation involve the number of armed escorts, frequency of communications, types of vehicles and containers, route information and reporting of shipments. These requirements apply to shipments of five kilograms or more of high-enriched uranium-235 and uranium-233 and two kilograms of plutonium.

Organizations transporting these quantities of nuclear materials must assure that the physical security system is capable of restricting access and activity in the vicinity of a shipment and of preventing unauthorized access to or removal of nuclear material from the carrier.

New testing and maintenance programs also are required to assure the continuing operation and effectiveness of security systems for fixed sites and for the transportation of the material.

The amendments to Part 73 of NRC regulations were first proposed in June of 1977. Following consideration of public comments, substantial changes were made and the proposed amendments were again published for comment in August 1978. In response to the comments, additional changes have been made and the amendments are now being published in final form.

In adopting these amendments the Commission decided that the requirements should not be made effective until guidance has been published to assist licensees in meeting performance-oriented physical protection requirements for affected facilities and activities. The Commission noted it has taken into account the need for considering public comments on this guidance; this need will be accommodated by the time period specifying the effective date of the amendments. Prior to the publication of these amendments, two guidance documents have been published for public comment. These are: (1) "Fixed Site Physical Protection Upgrade Rule Guidance Compendium, Volume I and II" and (2) Regulatory 5.(SG904-4), "Standard Format and Content, Physical Protection of Strategic Special Nuclear Material In Transit."

In addition, revisions to Regulatory Guides 5.7, Exit/Entry Control to Protected Areas, Vital Areas, and Material Access Areas," 5.14, "The Use of Observation (Visual Surveillance) Techniques in Material Access Areas," 5.44, "Perimeter Alarm Systems," and 5.57, "Shipping and Receiving

Control of Special Nuclear Material," have been made. These documents have also been published for comment.

Copies of these new and revised guidance documents are being sent to persons who have expressed an interest in this matter. Comments are being requested by (60 days after publication) so that final guidance can be published by the time the rule becomes effective.

The complete text of the amendments to Part 73 is being published in the Federal Register on _____. The amendments will be effective (120 days after FR).

#

Part 73

A-2

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

OFFICE OF THE SECRETARY

May 1, 1979

MEMORANDUM FOR: Lee V. Gossick, Executive Director for Operations

FROM: Samuel J. Chilk, Secretary

SUBJECT: DISCUSSION OF SAFEGUARDS UPGRADE RULE, 9:30 A.M., WEDNESDAY, APRIL 18, 1979, COMMISSIONERS' CONFERENCE ROOM, D. C. OFFICE (See SECY-79-187) (OPEN TO PUBLIC ATTENDANCE)

The Commission* was briefed on a final rule that would require strengthened physical protection safeguards systems for fuel cycle facilities and transportation involving formula quantities of strategic special nuclear material.

The Commission requested that:

1. staff report to the Commission on the ongoing program evaluating the 100 rem/hr at 3 ft. rule (10 CFR 73.6), including an analysis of:

   a) the original basis for this rule;
   b) the current validity of this rule, and;
   c) the impact of this rule on various licensed activities including non-power reactors and storage of spent fuel and radioactive waste.

   (NRR) (SECY Suspense: May 15, 1979)

2. staff elaborate on the statistical sampling technique used for random searches of packages prior to entering the protected area of fuel cycle facilities and whether or not this is applicable to DOE couriers and DOE vehicles.

   (NMSS) (SECY Suspense: May 15, 1979)

cc
Chairman Hendrie
Commissioner Gilinsky
Commissioner Kennedy
Commissioner Bradford
Commissioner Ahearne
General Counsel
Acting Director, Policy Evaluation

~~7906260405~~
PDR/LPDR

*Chairman Hendrie was not in attendance.

4/18/79

Part 73

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

July 13, 1979

SECY-79-187A

CONSENT CALENDAR ITEM

A-3

For: The Commissioners

From: William J. Dircks, Director
Office of Nuclear Material Safety and Safeguards

Thru: Executive Director for Operations

Subject: CHANGE TO UPGRADE RULE: MAKING "HIGH ASSURANCE" REQUIREMENT AN OBJECTIVE

Purpose: To obtain Commission approval for changes to 73.20(a) and (b) and 73.55(a) incorporating "high assurance" as an objective.

Category: This paper covers a minor issue requiring Commission action.

Discussion: Chairman Hendrie, at the June 27th briefing of the Upgrade Rule, indicated that it was the consensus of the Commission that both fuel cycle facilities and power reactors would use the term "high assurance," as an objective, in contrast to "reasonable assurance." A draft of a proposed change in wording to 73.20, which stipulates that "high assurance" would be an objective for the licensee to attain, was handed to each Commissioner. After reviewing the draft, the Chairman stated that the Commission, at its next meeting on the Upgrade Rule, would like to see similar wording applied to requirements of 73.55. This wording is attached along with previously distributed changes to 73.20(a) and (b). The comparative text indicates the changes made to the Upgrade Rule draft presently before the Commission as Enclosure "A" of SECY-79-187.

Recommendations: That the Commission approve the proposed changes to 73.20 and 73.55.

Coordination: The Offices of Inspection and Enforcement and Nuclear Reactor Regulation concur in the recommendation of the paper. The Executive Legal Director has no legal objection to the recommendations of the paper.

Contact:
L. J. Evans, Jr., SGRI
427-4181

7908210104
PDR

Scheduling: For consideration in conjunction with the Safeguards Upgrade Rule.

William J. Dircks, Director
Office of Nuclear Material
Safety and Safeguards

Enclosure:
Changes to 73.20(a) and (b)

Commissioners' comments or consent should be provided directly to the Secretary by c.o.b. Friday, July 20, 1979.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT July 18, 1979, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

This paper is tentatively scheduled for affirmation at an open meeting during the week of July 23, 1979. Please refer to the appropriate Weekly Commission Schedule, when published, for a specific date and time.

DISTRIBUTION:

Commissioners
Commission Staff Offices
Exec Dir for Operations
Regional Offices
ACRS
AS&LBP
AS&LAP

§73.20 General Performance Objective and Requirements.

(a) In addition to any other requirements of this part, each licensee who is authorized to operate a fuel reprocessing plant pursuant to Part 50 of this chapter; possesses or uses formula quantities of strategic special nuclear material at any site or contiguous sites subject to control by the licensee; is authorized to transport or deliver to a carrier for transportation pursuant to Part 70 of this chapter formula quantities of strategic special nuclear material; takes delivery of formula quantities of strategic special nuclear material free on board (f.o.b.) the point at which it is delivered to a carrier for transportation; or imports or exports formula quantities of strategic special nuclear material shall establish and maintain or make arrangements for a physical protection system which will have as its objective to provide [~~reasonable~~] high assurance that activities involving special nuclear material are not inimical to the common defense and security, and do not constitute an unreasonable risk to the public health and safety. The physical protection system shall be designed to protect against the design basis threats of theft or diversion of strategic special nuclear material and radiological sabotage as stated in §73.1(a).

(b) To [~~meet~~] achieve the general performance [~~requirements~~] objective of paragraph (a) of this section a licensee [~~shall~~] is required to establish and maintain, or arrange for, a physical protection system that:

(1) provides the performance capabilities described in Section 73.25 for in-transit protection or in Section 73.45 for fixed site protection unless otherwise authorized by the Commission;

(2) is designed with sufficient redundancy and diversity to assure maintenance of the capabilities described in Section 73.25 or 73.45; and

(3) includes a testing and maintenance program to assure control over all activities and devices affecting the effectiveness, reliability, and availability of the physical protection system, including a demonstration

that any defects of such activities and devices will be promptly detected and corrected for the total period of time they are required as a part of the physical protection system.

§73.55 Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage.

(a) General Performance Objective and Requirements.

The licensee shall establish and maintain an onsite physical protection system and security organization which will have as its objective to provide [~~reasonable~~] high assurance that activities involving special nuclear material are not inimical to the common defense and security, and do not constitute an unreasonable risk to the public health and safety.[1/] The physical protection system shall be designed to protect against the design basis threat of radiological sabotage as stated in §73.1(a). [~~In meeting these~~] To achieve this general performance [~~requirements~~] objective, the onsite physical protection system and security organization shall be required to include, but not necessarily be limited to, the capabilities to meet the specific requirements contained in paragraphs (b) through (h) of this section. The Commission

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1/ As used in this section, "high assurance" is comparable to the degree of assurance required by the Commission in its safety reviews for protection against severe postulated accidents having potential consequences similar to the potential consequences from reactor sabotage. It should be appreciated that the standard "reasonable assurance," commonly used in safety evaluations, is applied to a broad category of safety concerns ranging from the mitigation of minor anticipated operational occurrences to protection against severe postulated accidents. Thus, the degree of assurance necessary to provide "reasonable assurance" varies with the gravity of the safety concern.

may authorize an applicant or licensee to provide measures for protection against radiological sabotage other than those required by this section if the applicant or licensee demonstrates that the measures have the same high assurance objective as specified in this paragraph and that the overall level of system performance provides protection against radiological sabotage equivalent to that which would be provided by paragraphs (b)--(h) of this section. Specifically, in the special cases of licensed operating reactors with adjacent reactor powerplants under construction, the licensee shall provide and maintain a level of physical protection of the operating reactor against radiological sabotage equivalent to the requirements of this section.

Item 2(b);
Item 2(c) &
Item 2(e)

A-4

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

July 30, 1979

ALL NONPOWER REACTOR LICENSEES

Background

On July 24, 1979, the Commission published in the Federal Register (FR 43280-285) amendments to 10 CFR Parts 70 and 73 that will provide for physical protection measures to detect theft of special nuclear material (SNM) of moderate and low strategic significance. These amendments apply to nonpower reactor licensees and have been promulgated to apply the international standards of physical protection as outlined in Information Circular 225 (Revision 1) and recommended by the International Atomic Energy Agency. As noted in the notice issued February 28, 1979, the Office of Nuclear Reactor Regulation Safeguards planned visits at all affected nonpower reactor facilities to assist in the review and assessment of site specific characteristics. Most of the sites have now been visited. The new rule (10 CFR 73.47) is provided at Enclosure "A" as excerpted from the Federal Register Notice.

As noted in 10 CFR 73.47, all affected licensees must submit new physical security plans by 120 days from November 21, 1979 following the content and format of Regulatory Guide 5.XX, which was previously provided to you. Along with this submission and to insure licensing conditions reflect the category of physical protection to be maintained, each license must be changed to include the implementation and maintenance of the physical security plan as a license condition. As the new regulation defines the categories by quantity and enrichment of SNM and exempts SNM that can be maintained continuously at self protection levels of 100 rem/hour at three feet, the maximum limits of SNM authorized by the license also must contain these values. Therefore, submit within 30 days of receipt of this notice, the total amount of SNM required to be possessed, the total amount required in the core, the total amount required in storage, and the amounts of each of the foregoing to be exempt and nonexempt. It should be noted that with the implementation of the Safeguards Upgrade Rule, all fuel previously exempted that was in the core and had been irradiated is no longer exempt. The only exemption criteria is the self-protection criterion. If SNM is to be exempt an amendment to the Technical Specifications also must be made establishing surveillance requirements for measuring the radiation levels of the exempted fuel.

Sincerely,

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

7909150225
PDR

Enclosure: Federal Register Notice
(FR 43280-285)

9

NUCLEAR REGULATORY COMMISSION

10 CFR Parts 70, 73, and 150

Safeguard Requirements for Special Nuclear Material of Moderate and Low Strategic Significance

AGENCY: U.S. Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The Nuclear Regulatory Commission is amending its regulations for physical protection of plants and materials, including nonpower reactors, to require physical protection measures to detect theft of special nuclear material of moderate and low strategic significance. The amendments are being made in the interest of common defense and security. The measures are designed to provide a level of protection equivalent to that recommended in Information Circular/225/Rev. 1 (INFCIRC/225) published by the International Atomic Energy Agency (IAEA). The amendments specify protection requirements for special nuclear material at fixed sites, including nonpower reactors, and for special nuclear material in transit.

Physical protection requirements for independent spent fuel storage installations and nuclear power reactors are presently covered under 10 CFR § 73.40, § 73.50, and § 73.55 and therefore are not included in these amendments.

Concurrent with the publication of the amendments, the NRC is publishing a regulatory guide entitled, "Standard Format and Content for the Licensee Physical Security Plan for the Protection of Special Nuclear Material of Moderate or Low Strategic Significance." This document has been prepared as an aid to uniformity and completeness in the preparation and review of the physical security plan for special nuclear material of moderate and low strategic significance. In addition, a value/impact assessment of these amendments has been prepared and placed in the Commission's Public Document Room at 1717 H Street, NW., Washington, D.C.

EFFECTIVE DATE: November 21, 1979.

Note.—The Nuclear Regulatory Commission has submitted this rule to the Comptroller General for review of its reporting requirement under the Federal Reports Act, as amended, 44 U.S.C. 3512. The date on which the reporting requirement of the rule becomes effective, unless advised to the contrary, includes a 45-day period which that statute allows for Comptroller General review (44 U.S.C. 3512(c)(2)).

FOR FURTHER INFORMATION CONTACT: Mr. J. A. Prell, Safeguards Standards Branch, Office of Standards Development, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, (301) 443–3904 or Mr. C. K. Nulsen, Requirements Analysis Branch, Division of Safeguards, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, (301) 427–4043.

SUPPLEMENTARY INFORMATION: On May 24, 1978 the Nuclear Regulatory Commission published in the Federal Register (43 FR 22216) proposed amendments to 10 CFR Parts 70, 73, and 150 of its regulations. Interested persons were invited to submit written comments and suggestions on the proposed amendments within thirty days after publication in the Federal Register. Based on the public comments and other considerations, the Commission has adopted the proposed amendments, with modifications as set forth below.

The effective physical protection amendments are designed to have overall equivalency to the recommendations of INFCIRC/225 Rev. 1, but there are differences in the detailed requirements. INFCIRC/225 Rev. 1 recommendations are designed to minimize the possibilities of theft or sabotage of SNM of moderate or low strategic significance. The effective amendments have been primarily designed to require early detection of theft of SNM of moderate or low strategic significance. However, in requiring early detection capabilities, these amendments deter the possibilities of theft or diversion. In the judgment of the Commission, the degree of protection afforded by the containment, monitoring and detection procedures required by these amendments provide equivalency to the INFCIRC/225 Rev. 1 recommendations for protection of theft or diversion of SNM.

Significant differences from the proposed rule published for comment on May 24, 1978 are: (1) Plutonium-Beryllium (PuBe) sealed sources would be exempted from the physical protection requirements; (2) Plutonium with isotopic concentration exceeding 80 percent in plutonium-238 would be exempted from the physical protection requirements; (3) package and vehicle search requirements at facilities where special nuclear material of moderate strategic significance is used or stored have been changed; (4) The period of time allotted for submittal of a licensee plan to implement these requirements has been changed from 60 days to 120

days after the effective date of the amendment. In addition, editorial and clarifying changes were made and some definitions added to clarify the intent of the regulations.

The following discussion pertains to items (1) through (4) above.

(1) PuBe sealed sources—Commenters stated that the cost of providing the required physical protection for PuBe sealed sources would be prohibitive from the point of view of the limited budgets available at universities where most of the sources are now located. Imposition of the proposed requirements, it was said, would result in the curtailment of the use of PuBe sources at some sites with a significant impact on the educational and research programs at those institutions. In view of the very small quantities of plutonium found in PuBe sealed sources (generally, from 16 to 161 grams) and the fact that potential adversaries wishing to obtain a 5 kg formula quantity of plutonium would have to commit separate acts of theft at a large number of widely separated sites without being detected, the Commission has decided that the threat to the common defense and security of this country was sufficiently low that physical security measures should not be required for PuBe sealed sources. There is an upper limit of 500 grams of plutonium to which this exemption can be applied because greater than a 500 gram accumulation of plutonium in this form invalidates the basis for this exemption. IAEA guidelines allow for such exceptions in the case of research type facilities.

(2) More than 80 percent Pu-238—The proposed rule has been amended to reflect that plutonium with isotopic concentration exceeding 80 percent in plutonium-238 would be exempted from the physcial protection requirements. This change corrects an oversight in the initially proposed amendments in which it was intended that such material would be exempted to be consistent with the definitions of Category II and III material in the IAEA document INFCIRC/225/Rev. 1.

(3) Search requirements—Package and vehicle search requirements at facilities at which special nuclear material of moderate strategic significance is used or stored have been changed. As revised, random searches are only required regarding items leaving controlled access areas, and not of those entering. The primary objective of entry searches is to detect materials which could be useful in sabotage. Since protection against sabotage is not within the scope of the proposed amendments, an entry search requirement is not necessary.

(4) Submission and Implementation of Plans—Several commenters stated that more time would be needed than the sixty days allowed for submission of physical security plans, or amendments to them, following the date the proposed amendments become effective.

The Commission agrees that more time may be required, especially in the case of licensees who have limited managerial and finacial resources, and has changed the submission date to be 120 days following the effective date of the amendment. In addition, the licensee is now required to implement the approved security plan within 240 days following the effective date of the amendment or within 30 days after the plan is approved, whichever is later.

Concurrent with the publication of the amendments, the NRC is publishing a guide entitled "Standard Format and Content for the Licensee Physical Security Plan for the Protection of Special Nuclear Material of Moderate or Low Strategic Significance." The guide is being published for a sixty-day comment period and will be reissued with comments taken into consideration. The amendments to 10 CFR Parts 70, 73 and 150 would become effective at this time (120 days after publication) (November 21, 1979). Licensees would therefore have 240 days after publication of the amendments to submit their plans. The plan would have to be implemented 30 days after approval by the Commission or 360 days after (date of publication in the Federal Register) (July 24, 1979)

Another area of comment dealt with employee screening. Some of the licensees interpreted the screening requirement to call for a full field background investigation of all personnel entering the controlled access areas where the material is used or stored. The wording of the rule has been revised to more clearly indicate that the requirement is merely one requiring a screening based on knowledge of persons permitted access rather than a formal security investigation. The guidance package being issued with the rule explains more fully the intent of this requirement.

There was one other area of comment for which no specific changes were made to the amendments but which is of significance. These comments dealt generally with the technical jutification for the proposed amendments.

Many of the commenters questioned the technical justification for the proposed amendments on the basis of the a lack of detailed information regarding the threat, the additional costs of implementation they perceived to be incommensurate with only marginal improvements in physical protection and the impacts on the licensees' ongoing educational and research programs. Particular attention was focuses by some commenters on the physical protection requirements for low enriched uranium.

The technical justification for the U.S. adoption of the proposed amendments is contingent on both domestic and international factors, which are closely interrelated. Current NRC physical protection regulations apply primarily to strategic special nuclear material (uranium enriched in the isotope U-235 to 20% or greater, U-233, and plutonium) in quantities of five formula kilograms or greater. There are no specific physical protection requirements for quantities in lesser amounts. Yet, it can be properly argued that a 4.9 formula kilogram quantity of SNM is about as important a quantity as 5.0 kilograms. Multiple thefts of such materials in close to formula quantities could result in the accumulation of more than a formula quantity. The proposed detection requirements are considered to provide sufficient protection with minimum added cost so as not to affect educational and research programs. Since the requirements are of a detection nature rather than prevention, characterization of the adversary in the regulations was deemed not to be necessary.

In regard to low enriched uranium (LEU) (enrichments less than 20%), clandestine enrichment to higher levels may go beyond the capability of subnational terrorists, but it does not go beyond the capability of other governments. Unless properly safeguarded, low enriched uranium could be stolen on behalf of foreign governments and enriched to explosive useable levels after it is smuggled out of the U.S.

The Nuclear Non-Proliferation Act of 1978 specifies that NRC shall promulgate regulations which assure that physical security measures are provided to special nuclear materials exported from the United States without specifying whether the materials are low enriched uranium or high enriched uranium. Pursuant to this legislation, the Commission has promulgated 10 CFR Part 110.43 which provides among other things that:

"(b) Commission determinations on the adequacy of physical security programs in recipient countries for Category II and III quantities of material will be based on available relevant information and written assurances from the recipient country or

group of countries that physical security measures providing as a minimum protection comparable to that set forth in INFCIRC/225 will be maintained."

While the proposed amendments would provide a needed extension of domestic physical protection to special nuclear materials for which the level of physical protection required was not previously specified, the full value of such protection could not be realized until similar protection is afforded all such material among the nations utilizing such materials. Physical protection measures similar to those proposed, which are based on the recommendations of the IAEA Information Circular INFCIRC/225/Rev. 1, have already been adopted by several countries.

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and sections 552 and 553 of title 5 of the United States Code, the following amendments to Title 10, Chapter I, Code of Federal Regulations, Parts 70, 73, and 150 are published as a document subject to codification.

PART 70—DOMESTIC LICENSING OF SPECIAL NUCLEAR MATERIAL

1. Paragraph 70.22(g) of 10 CFR Part 70 is revised to read as follows:

§ 70.22 Contents of Applications

* * * * *

(g) Each application for a license that would authorize the transport or delivery to a carrier for transport of special nuclear material in an amount specified in § 73.1(b)(2) of this chapter shall include (1) a description of the plan for physical protection of special nuclear material in transit in accordance with §§ 73.30 through 73.36, 73.47 (a) and (c), 73.47(g) for 10 kg or more of special nuclear material of low strategic significance, and 73.70(g) of this chapter including, as appropriate, a plan for the selection, qualification and training of armed escorts, or the specification and design of a specially designed truck or trailer, and (2) a licensee safeguards contingency plan or response procedures, as appropriate, for dealing with threats, thefts, and industrial sabotage relating to the special nuclear material in transit. Each application for such a license involving formula quantities of strategic special nuclear material shall include the first four categories of information contained in the applicant's safeguards contingency plan. (The first four categories of information, as set forth in Appendix C to 10 CFR Part 73, are Background, Generic Planning Base, Licensee Planning Base, and Responsibility Matrix. The fifth category of information, Procedures, does not have to be submitted for approval.)

2. Paragraph 70.22(h) of 10 CFR Part 70 is revised to read as follows:

* * * * *

(h) Each application for a license to possess or use at any site or contiguous sites subject to control by the licensee uranium-235 (contained in uranium enriched to 20 percent or more in the uranium-235 isotope), uranium-233, or plutonium alone or in any combination in a quantity of 5,000 grams or more computed by the formula, grams = (grams contained U-235 + 2.5 (grams U-233 + grams plutonium), other than a license for possession or use of such material in the operation of a nuclear reactor licensed pursuant to Part 50 of this chapter, shall include a physical security plan, consisting of two parts. Part I shall address vital equipment, vital areas, and isolation zones, and shall demonstrate how the applicant plans to meet the requirements of §§ 73.40, 73.50, 73.60, 73.70, and 73.71 of this chapter in the conduct of the activity to be licensed. Part II shall list tests, inspections, and other means to demonstrate compliance with such requirements.

3. Section 70.22 is amended to add a new paragraph (k) to read as follows:

* * * * *

(k) Each application for a license to possess or use at any site or contiguous sites subject to control by the licensee special nuclear material of moderate strategic significance or 10 kg or more of special nuclear material of low strategic significance as defined under paragraphs 73.2 (x) and (y) of this chapter, other than a license for possession or use of such material in the operation of a nuclear power reactor licensed pursuant to Part 50 of this chapter, shall include a physical security plan which shall demonstrate how the applicant plans to meet the requirements of paragraph 73.47 (d), (e), (f) and (g), as appropriate, of Part 73 of this chapter.

PART 73—PHYSICAL PROTECTION OF PLANTS AND MATERIALS

4. Paragraph 73.1(b) of 10 CFR Part 73 is revised to read as follows:

§ 73.1 Purpose and Scope.

* * * * *

(b) *Scope*

(1) This part prescribes requirements for (i) the physical protection of production and utilization facilities licensed pursuant to Part 50 of this chapter; (ii) the physical protection of plants in which activities licensed pursuant to Part 70 of this chapter are conducted, and (iii) the physical protection of special nuclear material by any person who, pursuant to the regulations in Part 70 of this chapter, possesses or uses at any site or contiguous sites subject to the control by the license, formula quantities of strategic special nuclear material or special nuclear material of moderate strategic significance or special nuclear material of low strategic significance.

(2) This part prescribes requirements for the physical protection of special nuclear material in transportation by any person who is licensed pursuant to the regulations in Part 70 and Part 110 of this chapter who imports, exports, transports, delivers to a carrier for transport in a single shipment, or takes delivery of a single shipment free on board (f.o.b) where it is delivered to a carrier, formula quantities of strategic special nuclear material or special nuclear material of moderate strategic significance or special nuclear material of low strategic significance.

5. Section 73.2 of 10 CFR Part 73 is amended by revising paragraph (b) and adding new paragraphs (x), (y), (z), (aa) and (bb) to read as follows:

§ 73.2 Definitions.

* * * * *

(b) "Authorized individual" means any individual, including an employee, a student, a consultant, or an agent of a licensee who has been designated in writing by a licensee to have responsibility for surveillance of or control over special nuclear material or to have unescorted access to areas where special nuclear material is used or stored.

* * * * *

(x) "special nuclear material of moderate strategic significance" means:

(1) less than a formula quantity of strategic special nuclear material but more than 1000 grams of uranium-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope) or more than 500 grams of uranium-233 or plutonium or in a combined quantity of more than 1000 grams when computed by the equation, grams = (grams contained U-235) + 2 (grams U-233 + grams plutonium), or

(2) 10,000 grams or more of uranium-235 (contained in uranium enriched to 10 percent or more but less than 20 percent in the U-235 isotope).

(y) "special nuclear material of low strategic significance" means:

(1) less than an amount of strategic special nuclear material of moderate strategic significance, as defined in § 73.2(x)(1), but more than 15 grams of uranium-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope) or 15 grams of uranium-233

or 15 grams of plutonium or the combination of 15 grams when computed by the equation, grams = grams contained U-235 + grams plutonium + grams U-233, or

(2) less than 10,000 grams but more than 1000 grams of uranium-235 (contained in uranium enriched to 10 percent or more but less than 20 percent in the U-235 isotope), or

(3) 10,000 grams or more of uranium-235 contained in uranium enriched above natural but less than 10 percent in the U-235 isotope.

(z) "Controlled access area" means any temporarily or permanently established area which is clearly demarcated, access to which is controlled and which affords isolation of the material or persons within it.

(aa) "Strategic special nuclear material" means uranium-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope), uranium-233, or plutonium.

(bb) "Formula quantity" means strategic special nuclear material in any combination in a quantity of 5,000 grams or more computed by the formula, grams = (grams contained U-235) + 2.5 (grams U-233 + grams plutonium).

6. A new § 73.47 is added to 10 CFR Part 73 to read as follows:

§ 73.47 Licensee Fixed Site and In-Transit Requirements For The Physical Protection of Special Nuclear Material of Moderate and Low Strategic Significance.

(a) General Performance Objectives

(1) Each licensee who possesses, uses or transports special nuclear material of moderate or low strategic significance shall establish and maintain a physical protection system that will achieve the following objectives:

(i) Minimize the possibilities for unauthorized removal of special nuclear material consistent with the potential consequences of such actions; and

(ii) Facilitate the location and recovery of missing special nuclear material.

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

(i) Early detection and assessment of unauthorized access or activities by an external adversary within the controlled access area containing special nuclear material;

(ii) Early detection of removal of special nuclear material by an external adversary from a controlled access area;

(iii) Assure proper placement and transfer of custody of special nuclear material; and

(iv) Respond to indications of an unauthorized removal of special nuclear material and then notify the appropriate response forces of its removal in order to facilitate its recovery.

(b)(1) A licensee is exempt from the requirements of this section to the extent that he possesses, uses, or transports (i) special nuclear material which is not readily separable from other radioactive material and which has a total external radiation dose rate in excess of 100 rems per hour at a distance of 3 feet from any accessible surface without intervening shielding or (ii) sealed plutonium-beryllium neutron sources totaling 500 grams or less contained plutonium at any one site or contiguous sites or (iii) plutonium with an isotopic concentration exceeding 80 percent in plutonium-238.

(2) A licensee who has quantities of special nuclear material equivalent to special nuclear material of moderate strategic significant distributed over several buildings may, for each building which contains a quantity of special nuclear material less than or equal to a level of special nuclear material of low strategic significance, protect the material in that building under the lower classification physical security requirements.

(c) Each licensee who possesses, uses, transports or who delivers to a carrier for transport special nuclear material of moderate strategic significance of 10 kg or more of special nuclear material of low strategic significance shall:

(1) Submit by [date 120 days from effective date of amendment] a security plan or an amended security plan describing how the licensee will comply with all the requirements of Sections 73.47 (d), (e), (f), and (g), as appropriate, including schedules of implementation; and

(2) Within 240 days after the effective date of these amendments or 30 days after the plan(s) sumitted pursuant to paragraph (c)(1) of this section is approved, whichever is later, implement the approved security plan.

(d) Fixed Site Requirements for Special Nuclear Material of Moderate Strategic Significance—Each licensee who possesses, stores, or uses quantities and types of special nuclear material of moderate strategic significance at fixed sites, except those who are licensed to operate a nuclear power reactor pursuant to Part 50, shall:

(1) use the material only within a controlled access area which is illuminated sufficiently to allow detection and surveillance of unauthorized penetration or activities;

(2) store the material only within a controlled access area such as a vault-type room or approved security cabinet or their equivalent which is illuminated sufficiently to allow detection and surveillance of unauthorized penetration or activities;

(3) monitor with an intrusion alarm or other device or procedures the controlled access areas to detect unauthorized penetration or activities;

(4) conduct screening prior to granting an individual unescorted access to the controlled access area where the material is used or stored, in order to obtain information on which to base a decision to permit such access;

(5) develop and maintain a controlled badging and lock system to identify and limit access to the controlled access areas to authorized individuals;

(6) limit access to the controlled access areas to authorized or escorted individuals who require such access in order to perform their duties;

(7) assure that all visitors to the controlled access areas are under the constant escort of an individual who has been authorized access to the area;

(8) establish a security organization or modify the current security organization to consist of at least one watchman per shift able to assess and respond to any unauthorized penetrations or activities in the controlled access areas;

(9) provide a communication capability between the security organization and appropriate response force;

(10) search on a random basis vehicles and packages leaving the controlled access areas, and

(11) establish and maintain response procedures for dealing with threats of thefts or thefts of such materials.

(e) In-Transit Requirements for Special Nuclear Material of Moderate-Strategic Significance—

(1) Each licensee who transports, exports or delivers to a carrier for transport special nuclear material of moderate strategic significance shall:

(i) provide advance notification to the receiver of any planned shipments specifying the mode of transport, estimated time of arrival, location of the nuclear material transfer point, name of carrier and transport identification;

(ii) receive confirmation from the receiver prior to the commencement of the planned shipment that the receiver will be ready to accept the shipment at the planned time and location and acknowledges the specified mode of transport;

(iii) transport the material in a tamper-indicating sealed container;

(iv) check the integrity of the containers and seals prior to shipment, and

(v) arrange for the in-transit physical protection of the material in accordance with the requirements of § 73.47(e)(3) of this part unless the receiver is a licensee and has agreed in writing to arrange for the in-transit physical protection.

(2) Each licensee who receives special nuclear material of moderate strategic significance shall:

(i) check the integrity of the containers and seals upon receipt of the shipment.

(ii) notify the shipper of receipt of the material as required in Section 70.54 of Part 70 of this chapter, and

(iii) arrange for the in-transit physical protection of the material in accordance with the requirements of § 73.47(e)(3) of this part unless the shipper is a licensee and has agreed in writing to arrange for the in-transit physical protection.

(3) Each licensee, either shipper or receiver, who arranges for the physical protection of special nuclear material of moderate strategic significance while in transit or who takes delivery of such material free on board (f.o.b.) the point at which it is delivered to a carrier for transport shall:

(i) arrange for a telephone or radio communications capability, for notification of any delays in the scheduled shipment, between the carrier and the shipper or receiver,

(ii) minimize the time that the material is in transit by reducing the number and duration of nuclear material transfers and by routing the material in the most safe and direct manner,

(iii) conduct screening of all licensee employees involved in the transportation of the material in order to obtain information on which to base a decision to permit them control over the material,

(iv) establish and maintain response procedures for dealing with threats of thefts or thefts of such material,

(v) make arrangements to be notified immediately of the arrival of the shipment at its destination, or of any such shipment that is lost or unaccounted for after the estimated time of arrival at its destination, and

(vi) conduct immediately a trace investigation of any shipment that is lost or unaccounted for after the estimated time and report to the Nuclear Regulatory Commission as specified in § 73.71 and to the shipper or receiver as appropriate. The licensee who made the physical protection arrangements shall also immediately notify the Director of the appropriate Nuclear Regulatory Commission Inspection and Enforcement Regional Office listed in Appendix A of the action being taken to trace the shipment.

(4) Each licensee how exports special nuclear material of moderate strategic significance shall comply with the reqirements specified in § 73.47(c), (e)(1) and (e)(3).

(5) Each licensec who imports special nuclear material of moderate strategic significance shall,

(i) comply with the requirements specified in § 73.47(c) (e)(2) and (e)(3) and

(ii) notify the exporter who delivered the material to a carrier for transport of the arrival of such material.

(f) Fixed Site Requirements for Special Nuclear Material of Low Strategic Significance—Each licensee who possesses or uses special nuclear material of low strategic significance at fixed sites, except those who are licensed to operate a nuclear power reactor pursuant to Part 50, shall:

(1) store or use the material only within a controlled access area,

(2) monitor with an intrusion alarm or other device or procedures the controlled access areas to detect unauthorized penetrations or activities,

(3) assure that a watchman or offsite response force will respond to all unauthorized penetrations or activities, and

(4) establish and maintain response procedures for dealing with threats of thefts or thefts of such material.

(g) In-Transit Requirements for Special Nuclear Material of Low Strategic Significance—

(1) Each licensee who transports or who delivers to a carrier for transport special nuclear material of low strategic significance shall:

(i) provide advance notification to the receiver of any planned shipments specifying the mode of transport, estimated time of arrival, location of the nuclear material transfer point, name of carrier and transport identification,

(ii) receive confirmation from the receiver prior to commencement of the planned shipment that the receiver will be ready to accept the shipment at the planned time and location and acknowledges the specified mode of transport,

(iii) transport the material in a tamper indicating sealed container,

(iv) check the integrity of the containers and seals prior to shipment, and

(v) arrange for the in-transit physical protection of the material in accordance with the requirements of § 73.47(g)(2) of this part, unless the receiver is a licensee and has agreed in writing to arrange for the in-transit physical protection.

(2) Each licensee who receives quantities and types of special nuclear material of low strategic significance shall:

(i) check the integrity of the containers and seals upon receipt of the shipment,

(ii) notify the shipper of receipt of the material as required in § 70.54 of Part 70 of this chapter, and

(iii) arrange for the in-transit physical protection of the material in accordance with the requirements of § 73.47(g)(3) of this part, unless the shipper is a licensee and has agreed in writing to arrange for the in-transit physical protection.

(3) Each licensee, either shipper or receiver, who arranges for the physical protection of special nuclear material of low strategic significance while in transit or who takes delivery of such material free on board (f.o.b.) the point at which it is delivered to a carrier for transport shall:

(i) establish and maintain response procedures for dealing with threats of thefts or thefts of such material,

(ii) make arrangements to be notified immediately of the arrival of the shipment at its destination, or of any such shipment that is lost or unaccounted for after the estimated time of arrival at its destination, and

(iii) conduct immediately a trace investigation of any shipment that is lost or unaccounted for after the estimated arrival time and report to the Nuclear Regulatory Commission as specified in § 73.71 and to the shipper or receiver as appropriate. The licensee who made the physical protection arrangements shall also immediately notify the Director of the appropriate Nuclear Regulatory Commission Inspection and Enforcement Regional Office listed in Appendix A of the action being taken to trace the shipment.

(4) Each licensee who exports special nuclear material of low strategic significance shall comply with the appropriate requirements specified in § 73.47(c), (g)(1) and (g)(3).

(5) Each licensee who imports special nuclear material of low strategic significance shall:

(i) comply with the requirements specified in § 73.47(c), (g)(2) and (g)(3), and

(ii) notify the person who delivered the material to a carrier for transport of the arrival of such material.

7. Section 73.71(a) of 10 CFR Part 73 is revised to read as follows:

§ 73.71 Reports of unaccounted for shipments, suspected theft, unlawful diversion, or industrial sabotage.

(a) Each licensee who conducts a trace investigation of a lost or unaccounted for shipment pursuant to § 73.36(f), § 73.47(e)(3)(vi), or § 73.47(g)(3)(iii) shall immediately report to the appropriate NRC Regional Office listed in Appendix A the details and results of his trace investigation and shall file within a period of fifteen (15) days a written report to the appropriate NRC Regional Office setting forth the details and results of the trace investigation. A copy of such written report shall be sent to the Director, Office of Inspection and Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

* * * * *

8. Section 73.72 of 10 CFR Part 73 is revised to read as follows:

§ 73.72 Requirement for advance notice of shipment of special nuclear material.

Each licensee who plans to import, export, transport, deliver to a carrier for transport in a single shipment, or take delivery at the point where it is delivered to a carrier, formula quantities of strategic special nuclear material or special nuclear material of moderate strategic significance shall notify the Director of the appropriate Nuclear Regulatory Commission Inspection and Enforcement Regional Office listed in Appendix A by U.S. Mail, postmarked at least 7 days in advance of the shipping date. The following information shall be furnished in the advance notice: shipper, receiver, carrier(s), estimated date and time of departure and arrival, transfer point(s), and mode(s) of shipment. The Director of the appropriate Nuclear Regulatory Commission Inspection and Enforcement Regional Office shall also be notified by telephone 7 days in advance of the shipping date that an advance shipping notice has been sent by mail, and of any changes to the shipment itinery prior to the shipment date. Road shipments or transfers with one-way transit times of 1 hour or less in duration between installations of a licensee are exempt from the requirements of this section.

PART 150—EXEMPTIONS AND CONTINUED REGULATORY AUTHORITY IN AGREEMENT STATES UNDER SECTION 274

9. 10 CFR Part 150 is amended to add a new Section 150.14 to read as follows:

§ 150.14 Commission Regulatory Authority for Physical Protection.

Persons in Agreement States possessing, using or transporting special nuclear material of low strategic significance in quantities greater than 15 grams of plutonium or uranium-233 or uranium-235 (enriched to 20 percent or more in the U-235 isotope) or any combination greater than 15 grams when computed by the equation grams = grams uranium-235 + grams plutonium + grams uranium-233 shall meet the physical protection requirements of § 73.47 of 10 CFR Part 73.

EFFECTIVE DATE: November 21, 1979.

(Sec. 53, 161i, Pub. Law 83-703, 68 Stat. 948, Pub. Law 93-377, 88 Stat. 475; Sec. 201, Pub. Law 93-438, 88 Stat. 1242-1243, Pub. Law 94-79, 89 Stat. 413 (42 U.S.C. 2073, 2201, 5841).)

Dated at Washington, D.C. this 18th day of July, 1978.

For the Nuclear Regulatory Commission.

Samuel J. Chilk,

Secretary of the Commission.

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