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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

March 9, 1984

THE REGENTS OF THE UNIVERSITY  
OF CALIFORNIA

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## I. INTRODUCTION

On February 17, 1984, the Board's law clerk informed the attorney for UCLA that as a result of the Board's review of the UCLA security plan and the security inspection reports the Board is concerned that substantial misrepresentations may have been made to it by UCLA and the NRC staff regarding sabotage matters raised by Contention XX. By Memorandum and Order, dated February 24, 1984, the Board indicated its concerns and directed University and Staff to respond by March 9, 1984. In a related order of the same date the Board requested that University and Staff provide a description of the level of threat of sabotage the UCLA security plan is designed to meet. University hereby responds to the concerns expressed by the Board and provides the declarations of its attorneys and staff respecting their conduct in this matter. University submits that no misrepresentation has occurred but, instead, that there has been a misunderstanding. That misunderstanding is based on an inconsistent use of terms appearing in the Commission's safeguards regulations, more specifically, the unfortunate use of the term "radiological sabotage" in the introduction to the physical security plan for the UCLA reactor. University will explain the source of this misunderstanding by reference to these declarations certain other documents and the record in this proceeding. University is confident that upon its review of this material the Board will conclude that no misrepresentation has occurred.

## II. BACKGROUND

CBG's Contention XX, alleging inadequacies in UCLA's security plan, was submitted in substantially its present form on November 6, 1980. UCLA

opposed admission of the contention as lacking bases in its response of November 28, 1980. In its response of December 1, 1980, Staff also opposed all allegations made in the contention and argued in detail that the contention sought to apply 10 CFR Part 73 requirements not pertinent to UCLA's research reactor.

At the February 4-5, 1981 prehearing conference the contention was discussed at length in an attempt to clarify the legal bases for the contention. Tr. 359-390. During that discussion CBG's representative described the basis for the contention with reference to Sections 73.60 and 73.67. Tr. 380-81, 391-93. No mention was made of Sec. 73.40. Counsel for Staff stated that the specific safeguards regulations applicable to the UCLA research reactor were contained in Section 73.67 and that the allegations in the contention were not based on Sec. 73.67, but on the complicated and stringent safeguard rules for power reactors ". . . especially those in 73.55 requiring searches and detection devices, etc." Tr. 377-78. Counsel for Staff provided the further clarification that power reactors are required to prevent theft and sabotage by means of armed guards, detection devices and search requirements, but that non-power reactors with low to moderate quantities of special nuclear material are not required to protect against sabotage or theft. Such facilities are only required to detect unauthorized access. Tr. 394-95.

The Board admitted Contention XX on March 20, 1981, as modified by the Board to insert a reference to Sections 73.60 and 73.67 as the bases for the contention. On April 13, 1981 Staff moved for summary disposition of the contention. The Board deferred acting on Staff's motion pending the

completion of discovery. In order to pursue discovery of security matters, CBG was directed by the Board on July 1, 1981, to identify its proposed security witnesses, which the Board stated was the first step in the procedures established by the Appeal Board in the Diablo Canyon proceeding for the discovery of security information. On April 23, 1982 CBG moved to defer identification of its proposed security witnesses pending resolution of a disagreement concerning the scope of the protective order that was to govern the Contention XX proceedings. This disagreement has yet to be resolved and discovery of security information relative to Contention XX has not taken place.

By Order of July 26, 1982 the Board directed that CBG respond to certain portions of Staff's motion for summary disposition concerning the applicability of Sec. 73.60 and the need to protect against sabotage as asserted by CBG. In its September 7, 1982 response CBG argued that UCLA possessed greater than a formula quantity SNM and therefore Sec. 73.60 applied and with it, Sec. 50.34 (d), which requires a safeguard contingency plan for dealing with sabotage. CBG also argued that even if Sec. 73.60 does not apply, UCLA's security plan must provide protection against sabotage pursuant to Sec. 73.40(a). CBG stated in a footnote (page 5) that an adequate plan must include "sabotage prevention measures." CBG supplemented its response on February 8, 1983. The Board directed further responses of the parties regarding the inventory of the SNM at the UCLA facility to determine the applicability of Sec. 73.60.



On May 11, 1983 the Board issued its first ruling on Staff's motion.<sup>1/</sup> With respect to the need to protect against radiological sabotage the Board noted that on its face Sec. 73.40(a) was applicable to all licensees. The Board reviewed the legislative history of this provision and certain of the recent amendments to the Part 73 safeguards regulations, concluding that none of the changes had the effect of limiting the coverage of Sec. 73.40 in any way. As a result, the Board ruled that UCLA must institute some means of providing physical protection against sabotage. Noting that it had "addressed a complex portion of the regulations . . . charitably described as murky" the Board invited motions to reconsider its holdings. May 11 Order, at 25.

On August 15, 1983 the Staff petitioned for reconsideration<sup>2/</sup> of the rulings contained in the May 11 Order. Staff noted that Sec. 73.40(a) is only a "general" requirement and that the Board had not addressed the second sentence of Sec. 73.40(a) which states that licensees must maintain security systems approved by the NRC. Staff then explained that the specific requirements for licensees with SNM of moderate and low strategic significance, such as UCLA, are contained in 10 CFR Sec. 73.67. Staff stated:

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- <sup>1/</sup> Memorandum and Order (Ruling on Staff's Motion for Summary Disposition of Contention XX) (hereinafter, the "May 11 Order"). The Board's Order dealt with the SNM inventory question, the Pu-Be sealed neutron source exemption which affected the SNM accounting, and the asserted need to protect against radiological sabotage. The Board denied the motion.
- <sup>2/</sup> NRC Staff Petition for Reconsideration of the Licensing Board's Memorandum and Order Ruling on Staff's Motion for Summary Disposition (hereinafter, "Staff Petition").

The implementation of these objectives requires that licensees provide physical protection systems to detect unauthorized access or activities within the controlled access area. 10 CFR Sec. 73.67(2)(i)-(iv). Protection against sabotage and theft, as required by 73.40(a) and for power reactors in Sec. 73.55, is not required by Sec. 73.67.

The Board errs in believing that a general but unspecified requirement for protection against sabotage exists in Sec. 73.40(a) which would provide ad hoc regulating authority to Staff and/or Licensing Boards. . . Additionally, Sec. 73.40(a) also requires protection from theft of SNM rather than the lesser standard of detection specified in the performance objectives of Sec. 73.67. The Board's interpretation of Sec. 73.40(a) would result in either two contradictory regulations (regarding safeguards against theft) or application of only one phrase of Sec. 73.40(a) (regarding sabotage) to 104 licensees and exclusion of the rest of the sentence (regarding theft).

Staff supported its arguments by reference to the Statement of Considerations issued with 10 CFR Sec. 73.67 in July, 1979 (designated as Sec. 73.47 at that time),<sup>3/</sup> the Staff's advisory memorandum to the Commission of January, 1979,<sup>4/</sup> the Statement of Considerations accompanying the adoption of the "Upgrade Rule," including Sec. 73.67, published in November, 1979,<sup>5/</sup> and NUREG/CR-0843, Consequences of Sabotage of Nonpower Reactors, dated June, 1979. Finally, Staff noted that the proposed rule<sup>6/</sup> adding a new Sec. 73.67(h) for non-power reactor licensees with formula quantities of SNM would be held "to the performance standard in 10 CFR

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<sup>3/</sup> 44 Fed. Reg. 43280 (July 24, 1979).

<sup>4/</sup> SECY-79-38, January 16, 1979.

<sup>5/</sup> 44 Fed. Reg. 68184 (November 28, 1979).

<sup>6/</sup> Safeguards Requirements for Nonpower Reactor Facilities Authorized to Possess Formula Quantities of Strategic Special Nuclear Material. 46 Fed. Reg. 46333 (September 18, 1981), republished for comment, 48 Fed. Reg. 34056 (July 27, 1983).

Sec. 73.67(a) for detection of intrusion and theft, but not protection."

Staff's Petition, at 14.

On August 25, 1983 University responded in support of Staff's Petition,<sup>7/</sup> stating that Sec. 73.67 contains the specific safeguards requirements applicable to the UCLA facility. UCLA's attorney also stated:

University wishes to note that its security plan, which is not designed to provide protection against sabotage, has been approved by the Commission's safeguards branch . . .

University's August 25 Response, at 2.

On October 24, 1983,<sup>8/</sup> the Board granted Staff's Petition in part, reversing certain of its earlier rulings and holding that the accounting for SNM at the UCLA facility submitted separately by Staff and UCLA were in agreement and correct and that Pu-Be sealed neutron sources were exempt from the SNM accounting. As a result of these holdings the Board ruled that Sec. 73.60 was not applicable to the UCLA facility. However, the Board adhered to the ruling in its May 11 Order concerning the applicability of Sec. 73.40(a) and the need to provide protection against radiological sabotage. The Board also solicited the positions of its parties concerning what portions of Contention XX remained for hearing in light of the Board's recent rulings.

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<sup>7/</sup> University's Response in Support of NRC Staff Petition for Reconsideration of the Licensing Board's Memorandum and Order Ruling on Staff's Motion for Summary Disposition (hereinafter, "University's August 25 Response").

<sup>8/</sup> Memorandum and Order Ruling on Staff's Motion for Reconsideration--Contention XX (hereinafter, the "October 24 Order").

University responded on December 13, 1983,<sup>9/</sup> pointing out that in its view Contention XX contained the assertion that UCLA should be able to prevent all possible acts of sabotage. University stated:

In response to that specific claim University has asserted that the Commission's regulations do not require that it be able to "protect against sabotage" in the sense of any requirement that University employ measures at its facility that will be effective in thwarting or preventing specific acts of sabotage or theft.

However, the protection against sabotage and theft required by Sec. 73.40(a) can be interpreted in a more general sense. Certainly, the security measures employed by UCLA in satisfaction of the requirements of Sec. 73.67 provide some measure of protection against sabotage and theft, even though the design objective of that regulation is only to detect theft or diversion of SNM.

University's Position, at 4-5. University requested that the Board clarify whether its ruling concerning the applicability of Sec. 73.40(a) means that UCLA must institute protective measures in addition to those specified in Sec. 73.67. Id., at 6.

In its December 23, 1983 Order, the Board declined to provide the clarification requested by University stating that it is the parties' responsibility to analyze the realistic threat of sabotage faced by the facility and the degree of protection necessary to meet that threat.

In that Order the Board acknowledged allegations made by CBG that certain misrepresentations had been made to the Board by Staff counsel and two staff members who furnished affidavits in support of Staff's motion for summary disposition. One of the allegations concerned the misrepresentation of sabotage protection requirements for non-power reactors. The Board

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<sup>9/</sup> University's Position Concerning Contention XX (hereinafter, "University's Position").

requested Staff's response to the allegations and also referred the matter to the Office of Inspector and Auditor. Staff submitted its response to these allegations on January 10, 1984. Staff supported the truth of the statements made by its declarant on sabotage protection matters by reference to numerous agency documents.

### III. DISCUSSION

#### A. The Board's Concerns

In its Order the Board refers to its decision of October 24, 1983 that 10 CFR Sec. 73.40(a) requires that UCLA take some measures to protect against potential sabotage. Regarding that decision the Board states:

Throughout these proceedings until February 15, 1984, we had been lead /sic / to believe by Counsel that, first, Staff saw no requirement in the regulations that UCLA provide such protection and imposed no such requirement, and second, that UCLA's security plan indeed provided no such protection.

Order, at 3. The Board then quotes from statements made by Counsel for University and the NRC Staff in pleadings filed in August and December, 1983, and statements made by the NRC Staff in SECY-83-500, a proposed rulemaking action to clarify the application of Sec. 73.40(a). Respecting those statements the Board further states:

It thus was clear to us, based on the representations of Counsel, that UCLA's physical security plan was not designed to provide protection against sabotage and that Staff did not require that such protection be provided. However, the security plan and security inspection reports furnished by UCLA indicate that the opposite is true.

Order, at 6.

The Board gives four reasons as the basis of its conclusions that the UCLA Physical Security Plan is designed to provide protection against radiological sabotage and that the Staff has required that the UCLA plan provide such protection. First, the Introduction to the plan contains a statement that one of the purp. of the plan is to provide protection against radiological sabotage. Second, the Board's perusal of the plan suggests that the plan does include provisions aimed at providing such protection. Third, the security inspection reports indicate to the Board that the Staff did examine UCLA's activities related to physical protection against sabotage. Fourth, the Board interprets a statement in Staff's formal approval of the plan on November 9, 1983, that UCLA ". . . maintain and fully implement all provisions . . ." of the plan (Board's emphasis), to require UCLA to provide protection against radiological sabotage. (Order, at 6-7.)

B. University's Response

University's statements regarding the issue of the requirement to provide "protection against radiological sabotage" have resulted in a misunderstanding which is explained in the Declaration of William H. Cormier (attached hereto). Here, the University wishes to address the Board's stated reasons for its conclusion that the UCLA security plan is designed to protect against radiological sabotage.



1. UCLA's Security Plan was Designed to Comply with the Applicable Requirements of 10 CFR Sec. 73.67.

UCLA's Physical Security Plan was submitted on March 10, 1980 to comply with the provisions of the new Sec. 73.67, made applicable to non-power reactors possessing SNM of low and moderate strategic significance.<sup>10/</sup> Concurrent with the publication of the amendments in July, 1979, the NRC published a regulatory guide,<sup>11/</sup> ". . . 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." 44 Fed. Reg. 43280.

As expressly stated on its cover page, the Draft Guide was issued to involve the public in the early stages of the development of a regulatory position in this area. See: Draft Guide (attached). In January, 1980, Regulatory Guide 5.59 was issued. In all respects relevant here, including its title, Regulatory Guide 5.59 is the same as the Draft Guide. Regulatory Guide 5.59 was revised once and reissued in February 1983.

As Mr. Ashbaugh explains in his Declaration, as security officer for the facility he was responsible for the preparation of the UCLA security

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<sup>10/</sup> Physical Protection Upgrade Rule, 44 Fed. Reg. 68184 (November 28, 1979). Sec. 73.67, designated Sec. 73.47, was published for comment on July 24, 1979. Safeguards Requirements for Special Nuclear Material of Moderate and Low Strategic Significance, 44 Fed. Reg. 43280.

<sup>11/</sup> "Standard Format and Content for the Licensee Physical Security Plan for the Protection of Special Nuclear Material of Moderate or Low Strategic Significance," dated July, 1979 and published in draft form (hereinafter, "Draft Guide"). The Draft Guide together with the Federal Register Notice were sent to "NRC Licensees" by letter of Robert B. Minogue, Director, Office of Standards Development (attached).

plan. Mr. Ashbaugh relied on the Draft Regulatory Guide and a sample security plan which had been obtained from the NRC.<sup>12/</sup>

The "Introduction" to the Draft Guide (as well as Regulatory Guide 5.59) notes the relevant regulatory framework and then explains the requirements of physical security plans and the purpose of the guidance document:

Paragraph 50.34(c) of 10 CFR Part 50 and paragraphs 70.22(g), 70.22(h) and 70.22 (k) of 10 CFR Part 70 identify the physical protection information that must be provided in a Physical Security Plan as part of a license application. This plan is required in order for the applicant to demonstrate compliance with the specific physical protection requirements of 10 CFR Part 73 . . .

This regulatory guide describes the information required in the physical security plan submitted as part of an application for a license to possess, use, or transport SNM of moderate strategic significance . . .

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This guide has been prepared to minimize lost time attributable to incomplete physical security plans and to standardize the review process . . . Although conformance with the guide is not required, the format and content presented are acceptable to the NRC staff.

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#### Purpose and Applicability

This standard format has been prepared as an aid to uniformity and completeness in the preparation and review of the physical protection section of license applications and to clarify

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<sup>12/</sup> The document bears the title, "Sample Physical Security Plan for Non-Power Nuclear Reactor Facilities Possessing Special Nuclear Material of Moderate Strategic Significance," is dated June 14, 1979 ("Revision 1") and it is indicated that the document comes from the Office of Nuclear Reactor Regulation. (Hereinafter, "Sample Plan"; attached.) The document contains no print markings nor descriptive designations.

the intent of the regulations. The information this guide contains will help the licensee plan a physical protection system designed to detect the theft of SNM of moderate to low strategic significance. The physical protection subsystems identified are intended to provide a reference physical protection system that would normally be capable of meeting the performance requirements of paragraph 73.47(a) of 10 CFR Part 73 . . .

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#### Use of the Standard Format

The applicant should follow the numbering system of the Standard Format down to the level of section (e.g., 3.4). . . .

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#### Style and Composition

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The applicant should strive for clear, concise presentation of information. Confusing or ambiguous statements and general statements of intent should be avoided. . . .

Draft Guide, pp. 1-6 (emphasis supplied).

As Mr. Ashbaugh states, he followed the format and specific requirements described in the Draft Guide in the development of the UCLA security plan. The Table of Contents of the Draft Guide was used as the Table of Contents for the UCLA plan. The Draft Guide relates each chapter and section to the specific requirement in Sec. 73.67 (identified as Sec. 73.47 in the Draft Guide). A perusal of the plan shows that the guidance document was followed closely and supports the conclusion that the plan was basically designed to comply with requirements of Sec. 73.67, as explicated in the guidance document.

Mr. Ashbaugh also explains that the introductory statement to the UCLA plan (page iii) was taken from the similar statement that appeared on pages

1 and 2 of the Sample Plan (attached) which UCLA received from the NRC at about the time it received the Draft Guide. (The stamp at the top of each page, "Contains 10 CFR 2.79C(d) Information . . ." was supplied by Mr. Ashbaugh.) The Sample Plan was obtained from the NRC and it was understood as a tool to be used. The Sample Plan had an advantage over the guidance document in that it constituted a concrete example of how a licensee's security plan should actually read. Although no specific introductory statement was called for in the Draft Guide, the presence of one in the sample plan suggested that such a statement would be appropriate. Accordingly, Mr. Ashbaugh prepared an introductory statement for the UCLA plan working from the Sample Plan. Mr. Ashbaugh was aware of the changes that were being made in the regulatory requirements for non-power reactors.<sup>13/</sup> He did use the newer term "radiological sabotage" in place of "industrial sabotage" which appears in the Sample Plan. However, he meant

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<sup>13/</sup> The changing regulatory structure applicable to research reactor facilities is a matter of record in this proceeding. See: NRC Staff Petition for Reconsideration of the Licensing Board's Memorandum and Order Ruling on Staff's Motion for Summary Disposition, dated August 15, 1983; especially the Commission memorandum, Physical Protection of Category II and III Material, SECY-79-38, attached thereto. See, also: NRC Staff Response to Board Orders to Respond to CBG's Allegations of Material False Statements, dated January 10, 1984; especially, the Affidavit of Donald M. Carlson. In particular, note in the Commission memorandum that entry search requirements at facilities possessing SNM of moderate significance were deleted from the proposed amendments with the following comment: "The primary purpose of entry searches is to detect materials which could be useful in sabotage. Since protection against sabotage was not within the scope of the proposed amendments, an entry search requirement would not be necessary." SECY-79-38, p. 2.

that term in a more general sense and did not have in mind the specific definition of the term that appears in Part 73 of the regulations.<sup>14/</sup>

University submits that the text of its security plan, apart from the introductory statement, is clear and it closely follows Regulatory Guide 5.59 in satisfying the requirements of 10 CFR Sec. 73.67. In hindsight, University should have used more care in its choice of words in the introductory statement. However, the purpose and content of the plan is best understood by reference to its actual provisions.

2. The Provisions of the Security Plan are not Specifically Aimed at Protection Against Radiological Sabotage.

The second stated reason for the Board's concern is the Board's belief that several provisions in the plan are aimed at protection against radiological sabotage. University does not know what provisions the Board has in mind nor what the Board understands to constitute "protection against radiological sabotage."

Under the Part 73 definition "radiological sabotage" is limited to deliberate acts endangering the public by exposure to radiation. 10 CFR Sec. 73.2(p). Mr. Ashbaugh states that he is aware of no assessment of a

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<sup>14/</sup> The term "radiological sabotage" as defined in Part 73 of the regulations is limited to deliberate acts which could endanger the public health and safety by exposure to radiation. 10 CFR Sec. 73.2(p). As used in UCLA's security plan radiological sabotage includes acts risking damage to the reactor or posing the threat of harm to students, staff, or members of the public.

specific threat of radiological sabotage, as defined in Part 73, for which a specific provision of the security plan is directed. Basically, the plan provides a system of controlled access by means of keys and locks, and alarms to detect unauthorized access by external adversaries. University believes the plan goes beyond what is strictly required under Sec. 73.67. Certain areas, not otherwise required to be controlled, are controlled for health physics reasons or to protect the contents of the areas from theft or damage. There are additional controls on the reactor and certain other equipment to restrict unauthorized uses which could damage equipment or violate license conditions. But these additional controls have not been taken in response to specific threats of radiological sabotage.

In its December 23, 1983 Memorandum and Order (Regarding Contention XX) the Board acknowledged Staff's position that compliance with Sec. 73.67 provides adequate protection for purposes of Sec. 73.40(a). The Board stated that it could not rule out the possibility that, after hearing, it might so conclude. Memorandum and Order (Regarding Contention XX), at 8. If the Board is inclined to that opinion then it is possible that it would view the provisions of the plan as providing some measure of protection against radiological sabotage. But, as explained in UCLA's December 13 response and in the Declaration of Mr. Cormier, University meant something entirely different when stating that the UCLA security plan was not designed to protect against radiological sabotage. University was distinguishing Sec. 73.67 requirements from those applicable to nuclear power plants.



3. The Security Inspection Reports do not Indicate that the Staff was Enforcing a Specific Requirement Under Sec. 73.40(a)

In the case of non-power reactors possessing less than formula quantities of SNM, the standard clause that appears in all NRC security inspection reports does not impose requirements beyond those of Sec. 73.67 and instead should reasonably be understood to refer to the specific requirements of Sec. 73.67 (which, according to Staff's position, could be deemed to satisfy the protections required under Sec. 73.40).

4. The November 9, 1983 NRC Approval of the UCLA Security Plan Requires No More than the Implementation of the Specific Provisions of the Plan.

The Board's Order of February 24, 1984, suggests that additional security requirements might flow from the November 9, 1983 NRC approval of the UCLA security plan.<sup>15/</sup> The approval does require UCLA to ". . . maintain and fully implement all provisions of the Commission's approved physical security plan . . ." However, the reference to "all provisions" need not be regarded as including the introductory statement. The term "all provisions" refers to the provisions of the plan itself, not the introduction. The matter is clarified by the transmitting letter which states:

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<sup>15/</sup> Amendment No. 12, approval of the UCLA Physical Security Plan submitted March 10, 1980, was transmitted by letter from Cecil O. Thomas, Chief, Standardization and Special Projects Branch to Dr. Walter F. Wegst, dated November 9, 1983. The amendment was also signed by Mr. Thomas.

We have reviewed the submittal, as amended, and have concluded that it meets the requirements of 10 CFR 73.67 for the protection of special nuclear material of moderate strategic significance. (Emphasis supplied.)

Both the amendment and the transmitting letter were signed by the same NRC official. University understands "all provisions" to refer to provisions of the plan which satisfy the requirements of Sec. 73.67.

#### IV. CONCLUSION

University submits that neither the University nor the NRC has engaged in any misrepresentation. What is here involved is a misunderstanding. University regrets any confusion which may have resulted from the reference to radiological sabotage in the introduction to the physical security plan for the UCLA reactor. That reference was unfortunate but we submit of no real significance. The text of the plan is clear as to security measures it contains.

Dated: March 9, 1984.

DONALD L. REIDHAAR  
GLENN R. WOODS  
CHRISTINE HELWICK

By



WILLIAM H. CORMIER  
Representing UCLA

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket No. 50-142
	)	(Proposed Renewal of Faculty
THE REGENTS OF THE UNIVERSITY	)	License Number R-71
OF CALIFORNIA	)	
	)	
(UCLA Research Reactor)	)	

DECLARATION OF DONALD L. REIDHAAR

I, Donald L. Reidhaar, say:

1. I am the General Counsel of The Regents of the University of California. The Office of the General Counsel is responsible for representing The Regents of the University of California (University) in legal proceedings in which the University is a party. Associate Counsel Glenn R. Woods and Assistant Counsel Christine Helwick are the attorneys in this office assigned to this proceeding before the Atomic Safety and Licensing Board of the Nuclear Regulatory Commission. William H. Cormier is on the staff of the Administrative Vice Chancellor at UCLA and is an attorney in good standing. Mr. Cormier, in consultation with the Office of the General Counsel and working under the supervision of Mr. Woods and Ms. Helwick, has been assigned principal operating responsibility for

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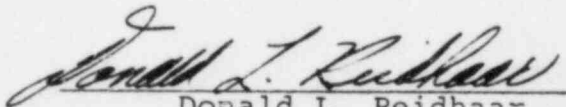
making appearances on behalf of the University in these proceedings.

2. I have read the Licensing Board's Order of February 24, 1984, and the concerns there expressed by the Board over a possible misrepresentation. Although I have not been personally involved in the relicensing proceedings, I have carefully reviewed the facts giving rise to the Board's concern. Based on that review I am convinced that no misrepresentation has occurred and that the University's attorneys and staff have acted in good faith and in a professional manner.
3. The use of the term protection against "radiological sabotage" in the Introduction to the University's Security Plan is unfortunate; nevertheless the specific provisions of the Plan itself are clear and precise. They do not entail the kind of precautions required of nuclear power plants. Rather, they are the type of requirements made applicable to research reactors under 10 Code of Federal Regulations section 73.67.
4. The Board's expression of surprise in this matter is understandable given the use of the words "radiological sabotage" in the Introduction. Still, I am satisfied that a reading of the Plan itself eliminates any

ambiguity. The content of the plan is consistent with earlier statements made by Mr. Cormier concerning the UCLA Physical Security Plan.

I declare under penalty of perjury that the foregoing is true and correct.

Executed at Berkeley, California this 8th day of March 1984.

  
Donald L. Reidhaar

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
THE REGENTS OF THE UNIVERSITY	)	Docket No. 50-142
OF CALIFORNIA	)	(Proposed Renewal of Facility
	)	License Number R-71)
(UCLA Research Reactor)	)	
	)	

DECLARATION OF CHARLES E. ASHBAUGH III

I, Charles E. Ashbaugh, say:

1. I am a lecturer and Associate Development Engineer for the Nuclear Energy Laboratory (NEL) at UCLA. I have a Master's Degree in Nuclear Engineering from UCLA and I am licensed by the NRC as a Senior Reactor Operator. Since 1974 I have been the Security Officer at the NEL, with the responsibilities of writing the security plan and its amendments, coordinating with UCLA and NRC staff on security matters, controlling personnel access and procuring and maintaining the security equipment.
2. I wrote the UCLA Physical Security Plan which was submitted to the NRC on March 11, 1980. The security plan was UCLA's response to the new safeguards requirements for non-power reactor facilities possessing SNM of moderate strategic significance adopted by the NRC in November, 1979. The security plan was developed with the assistance of the Federal Register notice of July 24, 1979 (Vol. 44, No. 143) which explained the proposed rule, the draft regulatory guide, "Standard



Format and Content for a Licensee Physical Security Plan for the Protection of Special Nuclear Material of Moderate or Low Strategic Significance", dated July, 1979, which was sent to licensees along with the Federal Register notice, and a document titled "Sample Physical Security Plan for Non-Power Nuclear Reactor Facilities Possessing Special Nuclear Material of Moderate Strategic Significance", dated June 14, 1979, which UCLA received at about the same time.

3. The UCLA security plan was written to satisfy the specific requirements of 10 CFR Sec. 73.67 of the regulations, as explained in the draft regulatory guide finally adopted as Regulatory Guide 5.59 in January 1980. I used the basic format recommended in the draft guide and relied on its explanations of the requirements. My copy of the draft guide and Federal Register notice are attached. The markings and marginal notes that appear on those documents were made by me at the time I was drafting the plan to note significant items.
4. The statements on page iii of the UCLA security plan ("Introduction: Purpose and General Performance Objectives") were based on the statements appearing on pages 1 and 2 of the sample security plan. The sample security plan referred both to radiological sabotage and industrial sabotage. I used the former term as the better description, though I did not have in mind the specific definition of radiological sabotage that appears now in Part 73 of the regulations. I took the

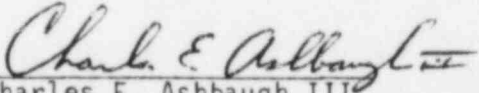
more general view that radiological sabotage included any sabotage that involved the reactor or its associated equipment and any sabotage which could lead to radioactive contamination or radiological release that could pose a danger to students, staff or members of the public.

5. I believe that UCLA facility is well protected against theft of the fuel or other valuable items and against any deliberate attempts to damage the reactor, its equipment, or other parts of the facility. The basic means of providing such protection is to control access to the facility and to have a means of detecting unauthorized access should it occur. In addition, the security system at UCLA includes a number of enhancements that are not strictly required. All the controls in the UCLA security system provide some degree of protection against an intruder whatever his purpose may be. But the security plan does not provide for armed guard presence at the facility at all times, nor mandatory personnel searches and explosives detection devices, nor other such special measures, which the intervenor claims are necessary to protect against radiological sabotage. The plan was not developed with any specific design basis radiological sabotage threat in mind. Because theft of the fuel would require considerable time to carry out, a good detection system represents a significant protection, particularly with the UCLA Argonaut reactor where it is very difficult to get to the fuel. The major protection at the UCLA facility against acts of sabotage that could result in fission product releases endangering the public is

the reactor itself. The reactor is a dense graphite and concrete structure and its operating characteristics are such that the controls cannot be manipulated to cause the fuel to melt. Also, any credible incident that resulted in the crushing of the fuel will not release fission products endangering the public.

I declare under penalty of perjury that the foregoing is true and correct.

Executed at Los Angeles, California this 9th day of March, 1984.

  
Charles E. Ashbaugh III

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
THE REGENTS OF THE UNIVERSITY	)	Docket No. 50-142
OF CALIFORNIA	)	(Proposed Renewal of Facility
	)	License Number R-71)
(UCLA Research Reactor)	)	
_____	)	

DECLARATION OF WILLIAM H. CORMIER

I, William H. Cormier, say:

1. I am an attorney in good standing and licensed to practice law in the State of California. I am on the staff of the Administrative Vice Chancellor of the Los Angeles campus of the University of California (UCLA). In that capacity I have been delegated, by the Office of the General Counsel of The Regents of the University of California, and under the supervision of Glenn R. Woods and Christine Helwick of that office, the authority to represent UCLA in the proceedings to renew the license of the UCLA research reactor.
2. In its Memorandum and Order of February 24, 1984, the Board expressed concern that counsel for UCLA might have misrepresented certain facts in statements made in pleadings dated August 25, 1983 and December 13, 1983. The statements in question, quoted on pages 3 and 4 of the Board's Order, were drafted and submitted by me. Although I consult with the Office of General Counsel, those particular statements were not reviewed

with Mr. Reidhaar, Mr. Woods nor Ms. Helwick prior to their submission. The statements were not reviewed by any other representative of The Regents. In making these statements, however, I was acting within my authority to represent UCLA in this proceeding on behalf of the University.

3. I reviewed the UCLA security plan in November 1980 in the office of Mr. Ashbaugh, security officer for the UCLA facility. Mr. Ashbaugh informed me that access to the plan was restricted on the basis of an "established need to know." Consistent with that restriction my review of the plan was brief, perhaps 10 minutes, and was limited to basically flipping the pages to get an idea of what the plan was like. I do not recall that I saw the introduction to the plan. I reviewed the plan again in Mr. Ashbaugh's office in June 1982 in preparation for the discussion that was to occur at the June 29-30, 1982 prehearing conference on the protective order for the release of security information. My review was directed to particular portions of the plan that contained potentially sensitive information. My review and discussion with Mr. Ashbaugh lasted less than one-half hour. I do not recall that I saw the introduction to the plan at that time.
4. I did not review the plan again until January 1984 when Mr. Ashbaugh and I spent several days preparing expurgations of the plan and the inspection reports prior to sending the material to the Board for its review on January 31, 1984. At that time I did note the introduction to the plan and discussed it briefly with Mr. Ashbaugh. I understood that

Mr. Ashbaugh's references there to protection against radiological sabotage were not meant in the same sense in which I used that term in my pleadings. I also understood that Mr. Ashbaugh did not mean to imply by the statements that the security plan incorporated specific provisions designed to protect against radiological sabotage as that term had been used by the intervenor.

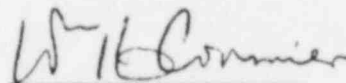
5. The statement made by me in University's August 25, 1983 response, that the UCLA security plan is not designed to provide protection against radiological sabotage, was intended to inform the Board that the UCLA plan did not employ measures, such as armed guards, mandatory personnel searches, explosive detection devices, etc., designed to prevent access to its reactor facility by potential saboteurs. In the context of this proceeding to resolve Contention XX that is what I understood the expression, "protection against radiological sabotage," had meant. That is how the intervenor had described the level of protection it claimed was required under Sec. 73.40(a). For example, in its September 7, 1982 pleading, intervenor declared that an adequate plan must include "sabotage prevention measures" and that "no prevention is no protection" (page 5). My statement meant that the UCLA security plan did not incorporate the specific measures (guards, searches, etc.) to provide the degree of protection (prevention of access by saboteurs) which CBG claimed was necessary. I attempted to further clarify the meaning I intended in University's December 13, 1983 response (pages 3-6).



6. As I intended my statement to be interpreted I do not believe it misrepresents the facts nor are the facts inconsistent with University's legal position on the question of the safeguards requirements that apply to University's facility.

I declare under penalty of perjury that the foregoing is true and correct.

Executed at Los Angeles, California this 9th day of March, 1984.

  
William H. Cormier

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
THE REGENTS OF THE UNIVERSITY	)	Docket No. 50-142
OF CALIFORNIA	)	(Proposed Renewal of Facility
	)	License Number R-71)
(UCLA Research Reactor)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of the attached: UNIVERSITY'S  
RESPONSE TO BOARD'S ORDER OF FEBRUARY 24, 1984

In the above-captioned proceeding have been served on the following by  
deposit in the United States mail, first class, postage prepaid, addressed  
as indicated, on this date: March 9, 1984.

John H. Frye, III, Chairman  
Administrative Judge  
ATOMIC SAFETY AND LICENSING BOARD  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dr. Emmeth A. Luebke  
Administrative Judge  
ATOMIC SAFETY AND LICENSING BOARD  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Mr. Glenn O. Bright  
Administrative Judge  
ATOMIC SAFETY AND LICENSING BOARD  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Counsel for the NRC Staff  
OFFICE OF THE EXECUTIVE LEGAL DIRECTOR  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555  
Attn: Ms. Colleen P. Woodhead

Chief, Docketing and Service Section (3)  
OFFICE OF THE SECRETARY  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

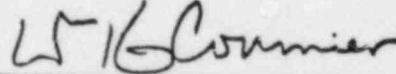
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\_\_\_\_\_  
WILLIAM H. CORMIER  
Representing UCLA

THE REGENTS OF THE UNIVERSITY  
OF CALIFORNIA

CONTAINS 10 CFR 2.790(d) INFORMATION  
WITHHELD FROM PUBLIC DISCLOSURE

Sample Physical Security Plan  
for Non-Power Nuclear Reactor  
Facilities Possessing Special Nuclear  
Material of Moderate Strategic Significance

Reactor Safeguards Development Branch  
Division of Operating Reactors  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission

Revision 1  
June 14, 1979

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Purpose

This security plan describes the physical protection system and security organization which will provide protection against radiological sabotage and detect the theft of special nuclear material at the Sample Facility. It demonstrates compliance with 10 CFR 50.34(c), 10 CFR 73.40 and 10 CFR 73.47.



General Performance Objectives

The "General Performance Objectives" of the physical protection system and security organization described in this plan are:

To provide protection against acts of industrial sabotage.

To minimize the possibilities of unauthorized removal of special nuclear material consistent with the potential consequences of such actions.

To facilitate the location and recovery of missing special nuclear material.

To achieve these objectives, the physical protection system shall provide:

Early detection and assessment of unauthorized access or activities by an external adversary within the vital areas and controlled access areas containing special nuclear material.

Early detection of removal of special nuclear material by an external adversary from controlled access areas.

Assures proper placement and transfer of custody of special nuclear material.

.CONTAINS 10 CFR 2.790(d) INFORMATION  
WITHHELD FROM PUBLIC DISCLOSURE

Responds to indications of an unauthorized removal of special nuclear material and then notifies the appropriate response forces of its removal in order to facilitate its recovery.

Identification of Special Nuclear Material on Site

The Sample Licensee possesses the following special nuclear material on site:

<u>Form</u>		<u>Enrichment</u>	<u>Material</u>	<u>Amount</u>
<u>Non Exempt</u>				
MTR fuel elements	93.0%		U <sup>235</sup>	3300 gms
TRIGA fuel elements	19.4%		U <sup>235</sup>	544 gms
Fission chambers (4)	90.0%		U <sup>235</sup>	<u>10 gms</u>
TOTAL (Nonexempt)				3854 gms
<u>Exempt 73.47(b)(1)(i)</u>				
MTR fuel elements	93.0%		U <sup>235</sup>	210 gms
<u>Exempt 73.47(b)(1)(ii)</u>				
Plutonium Beryllium sealed sources(3)			Pu	<u>48 gms</u>
TOTAL (Exempt)				258 gms

Implementation

This security plan shall be fully implemented by [ ] or 30 days  
after approval by the U.S. Nuclear Regulatory Commission, whichever is later.

General Site Layout

The site is 650 acres of the Sample Licensee Site. The majority of the site is on the alleuvial flood plain of the Sample River. The area adjacent to the site is farm land and is sparsely populated. Figure 1 provides a large scale drawing of the area. Figure 2 provides a drawing of the site layout.

### Security Areas

The Security Areas (SA) are permanently established areas which are clearly demarcated, access to which is controlled and which affords isolation of the material, equipment and persons within it.

The only SA is the Nuclear Reactor Building (with the exception of the Office Area). The SA is shown in Figures 3a, 3b. The SA is used for training and research. The SA encompasses the Controlled Access Areas (CAA) and the Vital Areas (VA).

The Reactor Building is a permanent two story structure fabricated with pre-formed and pre-stressed concrete slabs. The slab walls are held in place by poured concrete columns. The roof is a corrugated steel decking covered with light-weight concrete. A gravel and tar roofing material covers the concrete. The walls have steel and glass windows. All windows are sealed shut. All access doors to the SA are full-length solid core wooden doors, or full-length hollow core steel doors, or solid wood or hollow core steel doors with steel mesh screen in or over the glass.

The SA is composed of five major areas shown in Figures 3a, 3b. These areas are: (1) Reactor Room, (2) Control Room, (3) Fuel Storage Room, (4) Laboratory, and (5) Equipment Room.

Access to the SA is possible at only four locations. The normal access point is the main entrance door that separates the SA from the Office Area. The



other access points include a first floor emergency exit door, the basement emergency exit door, and the freight door. All access doors to the SA are locked and alarmed or the door is under the surveillance of an authorized individual.

Controlled Access Areas (Use)

All special nuclear material\* is used only within a Controlled Access Area (CAA) which is illuminated sufficiently to allow detection and surveillance of unauthorized penetration or activities.

The Nuclear Reactor Building (with the exception of the Office Area) is the CAA. The CAA is shown in Figures 4a, 4b

The illumination throughout the CAA is at least [ ] foot candle measured horizontally at floor level as shown in Figures 5a, 5b. The illumination may be reduced when necessary to conduct experiments requiring less illumination. All special nuclear material in use during such experiments shall be accounted for at the end of the experiment.

\*Special nuclear material listed in Table 1 may be used and stored outside the CAA.

Controlled Access Areas (Storage)

All special nuclear material\* is stored 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.

All special nuclear material at the facility is stored in designated areas within the CAA. The designated areas are: (1) reactor core, (2) spent fuel pool, (3) fuel storage room, and (4) security cabinet. The designated areas are shown in Figures 6a, 6b.

The reactor core is covered by [ ] feet of water and the irradiated fuel in the spent fuel pool is covered by [ ] feet of water. The reactor core and spent fuel pool are protected by a tamper-resistant motion detection system. Therefore, these two designated areas provide protection equivalent to that of a vault-type room.

The fuel storage room is a vault-type room constructed of concrete block with only one access door. The access door is a full length solid core steel door. The fuel storage room is (1) locked and alarmed and the room is protected by a tamper-resistant motion detection system which sounds an alarm upon the

\*Special nuclear material listed in Table 1 may be used and stored outside the CAA.

entry of a person anywhere in it and upon exit from the room or upon movement of an individual within the room, or (2) the fuel storage room is attended by an authorized individual.

The security cabinet is a standard commercial security cabinet approved by the General Services Administration as class 6 or equivalent. The security cabinet is locked or attended by an authorized individual.

All the storage areas are illuminated to at least [ ] foot candle throughout the CAA as shown in Figures 5a, 5b. The fuel storage room is illuminated only when the access door is open.

Vital Areas

All vital equipment is located within a Vital Area (VA).

The VA is a permanently established area which is clearly demarcated, access to which is controlled and which affords isolation of the material, equipment and persons within it. The vital areas are (1) the control room, and (2) the reactor room. These vital areas are shown in Figures 7a, 7b.

The vital equipments are: (1) the reactor, (2) reactor coolant system, (3) reactor controls, (4) primary biological shielding, and (5) irradiated nuclear fuel.

Detection Devices or Procedures

The SA is monitored by an intrusion detection system or other device or procedures to detect unauthorized penetration or activities. All special nuclear material is attended by an authorized individual or protected by the intrusion detection system as described below.

The intrusion detection system consists of three subsystems, the window intrusion detection system, the door intrusion detection system and the motion detection system. The location of the detection devices and area of coverage of the motion detection system are shown in Figures 8a, 8b.

The window intrusion detection system employs conductive foil detectors; the door intrusion detection system employs balanced magnetic switches; and, the motion detection systems employs microwave-radio frequency motion detectors. The intrusion detection system is tamper-resistant, line supervised and has an emergency power source. The functional and operational criteria for the intrusion detection system and subsystems are described in Attachment 1.

The intrusion detection system initiates an audio-visual intrusion alarm for any alarm condition in three locations: the Office Area, Control Room and Site Security Office.

The intrusion detection system is in service twenty-four hours a day. The door alarm for any door may be placed in the access mode if the SA is occupied by an authorized individual. The alarm for the main entrance door will normally be in access mode during work hours when the Office Area is occupied by an



authorized individual. The intrusion detection system will (1) be in service, or (2) the SA will be occupied by an authorized individual, or (3) the SA will be inspected by an authorized individual at least once each four hours on a random basis.

Surveillance of Security Areas

Surveillance of the security areas during a normal work day is by routine observation by the facility staff. All areas containing special nuclear materials and vital equipment are checked at the end of each normal work day. The checks are for proper locking of doors, storage of special nuclear material, unauthorized material, fire hazards and other abnormal conditions.

Preauthorization Screening

All personnel granted unescorted access to the SA shall be screened.

The Facility Director may grant an individual unescorted access to the SA based on (1) need for access, and (2) favorable review of information obtained on the individual for trustworthiness and reliability.

The following information shall be obtained for each individual screened:

(a) Facility Staff/Students (U.S. Citizens)

- (1) Employment records for last one year, and
- (2) Academic records for last one year, and
- (3) Personal reference letters from two nonrelated individuals.

(b) Foreign Students

- (1) Admissions file, and
- (2) Academic records for last one year, if available, and
- (3) Personal reference letters from two nonrelated individuals, if possible.

The Facility Director may authorize the following individuals unescorted access to the SA without review of the above information:

- (a) Facility Staff/Students granted unescorted access to the facility for at least the previous one year prior to the implementation of this security plan.
- (b) Facility Staff/Students holding or having held a government sanctioned clearance within the last one year.

The Facility Director may grant on a case-by-case basis an interim authorization for unescorted access to the SA prior to obtaining all the required information if sufficient information is available for the Facility Director to make a preliminary judgment concerning the reliability and trustworthiness of the individual.

Badging System

All authorized individuals granted unescorted access to the SA will wear a special badge while in the SA. Escorted individuals will not be badged.

The badge will be a distinctive color, approximately A inches x B inches and constructed of heavy paper. The badge will have a unique number, the individual's name, and the individual's photograph. The badge will be laminated in plastic to inhibit tampering.

All badges will be issued from the Office Area and returned to the Office Area at the end of the daily period of use. Badges will not be taken from the Reactor Building. All badges will be accounted for at the end of each work day.

### Lock System

Access to the SA is possible through only four doors. Access to the fuel storage room is possible through only one door. All security doors are shown in Figures 3a, 3b. All security doors except the main entrance door are normally locked. Security doors may be unlocked if attended by an authorized individual. The main entrance door is not locked during regular working hours when the Office Area is occupied by an authorized individual who will maintain access control.

Keys (combinations) to the locks are issued to only a limited number of authorized individuals designated in writing by the Facility Director. A physical inventory of locks, cores, keys and key cards is conducted at least once every 90 days. Unused locks, cores, keys, and key cards are stored in a secure location. Locks and keys (combinations) are changed whenever the system is compromised or a key is lost.

All doors are either full-length solid core heavy wooden doors, full-length hollow core steel doors, or solid wood or hollow core steel doors with steel mesh screen in or over the glass. All security locks (doors and cabinet) meet the specifications of Attachment 2.



Access Control Description

All individuals permitted unescorted access to the SA are screened. All unescorted personnel entering the SA are badged. A list signed by the Facility Director of individuals authorized unescorted access to the SA is maintained at the facility and Site Security Office.

Escort System

All individuals not authorized unescorted access (visitors) shall be escorted by an authorized escort. All individuals authorized unescorted access are authorized escorts. The following personnel may grant visitors escorted access to the SA: (1) all faculty/staff members authorized unescorted access and (2) students designated in writing by the Facility Director.

The visitor-to-escort ratio shall not exceed 20-to-1 unless authorized in writing by the Facility Director on a case-by-case basis. Escorts shall be capable of maintaining visual contact of all individuals under escort and shall remain in the general area with the visitors.

Search Description

All vehicles and packages leaving the SA are searched on a random basis. The search shall be conducted by a member of the Security Organization or Operating Organization. The search shall be by the following:

- A. All vehicles leaving the SA shall be searched. The search of the vehicle will include the cab, engine compartment, undercarriage and cargo area.
- B. Packages leaving the SA which are larger than a [ ] shall be searched in a random basis but not less than 1 in 10. All special nuclear material in a configuration smaller than a [ ] shall be inventoried at least once each 7 days.

Administrative and Security Organization

The Sample Facility security organization is made of up the following components:

Site Security Organization

1. Director of Site Security
2. Site Security Watchmen

Operating Organization

1. Facility Director
2. Facility Assistant Director
3. Reactor Supervisor
4. Reactor Health Physicist
5. Reactor Operators
6. Reactor Radiation Specialist
7. Facility Receptionists

The Facility Director or his designated representative has overall responsibility for the initiation and implementation of the security program at the Sample Facility.

The principal local law enforcement agency is the City Police Department. Secondary local law enforcement agencies are the County Sheriff and the State Police. The Site Security Department maintains liaison with the City Police Department which has committed to provide a response force when requested. The response time will normally be less than five minutes. The Site Security Department maintains at least one watchman per shift capable of providing response to the SA. The watchman is trained and qualified for his duties. The Site Security Department will (1) conduct periodic security checks of the SA when requested, (2) maintain liaison with the local law enforcement agency (3) notify the local law enforcement agency of any unauthorized penetrations or activities in the CAA requiring their attention and, (4) notify the facility management of any unauthorized penetrations or activities in the SA.

At least once each twelve months, the Facility Director and designated members of the operating organization will conduct a security program review .

Communication

The facility has a commercial telephone service with the Site Security Department. The Site Security Department maintains 2-way radio communications capability with its security officers on patrol and headquarters with fixed radio units in the patrol cars and portable radio units carried by the security officers. The Site Security Department has direct telephone and radio communications with the City Police Department. All the communications systems are available 24 hours each day. The communications systems are commercial grade.

Response Procedures

The facility has established and maintains response procedures for dealing with threats or actual thefts of special nuclear material and industrial sabotage. Response procedures for the following security incidents are maintained at the facility and the Site Security Department:

- 1) Bomb Threat
- 2) Threat of Theft of Special Nuclear Material
- 3) Theft of Special Nuclear Material
- 4) Unauthorized Intrusion
- 5) Security Violation by Authorized Personnel
- 6) Civil Disorder
- 7) Fire or Explosion
- 8) Loss/Degradation of Security System(s)
- 9) Industrial Sabotage

The response procedures describe the type of response to be accomplished, the duties and responsibilities of the security organization and management involved in the response, law enforcement assistance available, law enforcement assistance response capabilities, and law enforcement response agreements.

The Nuclear Regulatory Commission will be notified in the event of theft or attempted theft of special nuclear material.

Material Transportation Requirements

Whenever the facility transports, exports, or delivers to a carrier for transport special nuclear material of low or moderate strategic significance, the facility will:

1. Provide advance notification to the receiver of any planned shipment specifying the mode of transport, estimated time of arrival, location of the nuclear material transfer point, name of carrier and transport identification.
2. 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 location and that he acknowledges the specified mode of transport.
3. Transport the material in a tamper-indicating sealed container. The seals used will meet the requirements of Attachment 3.
4. Check the integrity of the containers and seals prior to shipment.
5. Arrange for the in-transit physical protection of the material in accordance with the requirements of 10 CFR 73.47, unless the receiver is a licensee and has agreed by written contract to arrange for the in-transit physical protection.



The facility does not expect to arrange for the in-transit physical protection of the special nuclear material. However, if the facility does arrange for the in-transit physical protection of the special nuclear material, the facility shall submit a change to this plan at least 120 days prior to the shipment date describing the physical protection system that will meet the applicable regulations.

Receiver Requirements

When the facility receives special nuclear material of low or moderate strategic significance, the facility will:

1. Check the integrity of the containers and seals upon receipt of the shipment.
2. Notify the shipper of receipt of the material as required by 10 CFR 70.54.
3. Arrange for the in-transit physical protection of the material in accordance with the requirements of 10 CFR 73.47, unless the shipper is a licensee and has agreed in writing to arrange for the in-transit physical protection.

The facility does not expect to arrange for the in-transit protection of the special nuclear material. However, if the facility does arrange for the in-transit physical protection of the special nuclear material, the facility shall submit a change to this plan at least 120 days prior to the shipment date describing the physical protection system that will meet the applicable regulations.

Export and Import Requirements

The facility does not plan to export or import special nuclear material of low or moderate strategic significance. However, if the facility does export or import special nuclear material of low or moderate strategic significance, the facility will submit a change to this plan 120 days prior to the shipment date describing the physical protection system that will meet the applicable regulations.

Test

The intrusion alarm detection system shall be functionally tested for proper operation at least once each 7 days.

Security Records

The following security records shall be maintained at the facility for at least 24 months:

- (1) List of individuals authorized unescorted access to the SA.
- (2) Test results for intrusion detection system.
- (3) List of individuals authorized to possess security keys (combinations).
- (4) Results of physical inventory of locks, cores, keys and key cards.
- (5) Results of response to security incidents.
- (6) Seal records.
- (7) Results of badge inventories.



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

CEA

TO: NRC LICENSEES

The NRC has just approved, in final form, amendments to 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material;" Part 73, "Physical Protection of Plants and Materials;" and Part 150, "Exemptions and Continued Regulatory Authority in Agreement States under Section 274." These amendments affect licensees who possess, use, or transport special nuclear material of moderate or low strategic significance. The amendments become effective 120 days after publication in the Federal Register. The 120-day delay is to allow sufficient time for review and public comment of a draft standard format and content guide and to prepare and implement security plans to meet the intent of the amendments.

Since these amendments may have some effect on your operations, we have enclosed a copy of them for your information. Also enclosed is a copy of the draft standard format and content guide for your review and comment. Comments on the guide should be sent by September 24, 1979, to:

Mr. James A. Prell  
Safeguards Standards Branch  
Office of Standards Development  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Sincerely,

*Robert B. Minogue*

Robert B. Minogue, Director  
Office of Standards Development

Enclosures:  
As stated

Std Format Sec. Plans

Sept 21 - comment.

# **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. ✓

**Notes.**—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)(3)).

#### **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) 443-5904 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 physical 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 financial 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 justification for the proposed amendments.

Many of the commenters questioned the technical justification for the proposed amendments on the basis of the 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 focused 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 (e), 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,  $\text{grams} = (\text{grams contained U-235} + 2.5 (\text{grams U-233} + \text{grams plutonium}))$ , 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 licensee, 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,  $\text{grams} = (\text{grams contained U-235}) + 2 (\text{grams U-233} + \text{grams plutonium})$ , 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 significance 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) submitted 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:

(i) use the material only within a controlled access area which is illuminated sufficiently to allow detection and surveillance of unauthorized penetration or activities,

(ii) 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,

(iii) monitor with an intrusion alarm or other device or procedures the controlled access areas to detect unauthorized penetration or activities,

(iv) 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,

(v) develop and maintain a controlled badging and lock system to identify and limit access to the controlled access areas to authorized individuals,

(vi) limit access to the controlled access areas to authorized or escorted individuals who require such access in order to perform their duties,

(vii) 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,

(viii) 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,

(ix) provide a communication capability between the security organization and appropriate response force,

(x) search on a random basis vehicles and packages leaving the controlled access areas, and

(xi) 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 who exports special nuclear material of moderate strategic significance shall comply with the requirements specified in § 73.47(c), (e)(1) and (e)(3).

(5) Each licensee 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 30, 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)(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 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 itinerary 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, 1811, Pub. Law 83-703, 88 Stat. 948; Pub. Law 93-377, 88 Stat. 475; Sec. 201, Pub. Law 93-438, 88 Stat. 1242-1243; Pub. Law 94-79, 88 Stat. 413 (42 U.S.C. 2073, 2201, 5841).)

Dated at Washington, D.C. this 18th day of July, 1979.

For the Nuclear Regulatory Commission.

Samuel J. Chalk,

Secretary of the Commission.

[FR Doc. 79-22971 Filed 7-23-79; 8:48 am]

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U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF STANDARDS DEVELOPMENT  
DRAFT REGULATORY GUIDE AND VALUE/IMPACT STATEMENT

July 1979  
Division 5  
Task MP 711-4

STANDARD FORMAT AND CONTENT  
FOR A LICENSEE PHYSICAL SECURITY PLAN  
FOR THE PROTECTION OF SPECIAL NUCLEAR MATERIAL  
OF MODERATE OR LOW STRATEGIC SIGNIFICANCE

This regulatory guide and the associated value/impact statement are being issued in draft form to involve the public in the early stages of the development of a regulatory position in this area. They have not received complete staff review and do not represent an official NRC staff position.

Public comments are being solicited on both drafts, the guide (including any implementation schedule) and the value/impact statement. Comments on the value/impact statement should be accompanied by supporting data. Comments on both drafts should be sent to the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Docketing and Service Branch, by

SEP 21 1979

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STANDARD FORMAT AND CONTENT FOR A LICENSEE PHYSICAL SECURITY  
PLAN FOR THE PROTECTION OF SPECIAL NUCLEAR MATERIAL OF MODERATE  
OR LOW STRATEGIC SIGNIFICANCE

INTRODUCTION

The Atomic Energy Act of 1954, as amended, directed the U.S. Atomic Energy Commission (AEC) to regulate the receipt, manufacture, production, transfer, possession, use, import, and export of special nuclear material (SNM) in order to protect the public health and safety and to provide for the common defense and security. The Energy Reorganization Act of 1974 transferred all the licensing and related regulatory functions of the AEC to the Nuclear Regulatory Commission (NRC).

The principal requirements with respect to the physical protection of licensed activities against industrial sabotage and with respect to the physical protection of special nuclear material in transit are found in 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," Part 70, "Domestic Licensing of Special Nuclear Material," Part 73, "Physical Protection of Plants and Materials," and Part 110, "Export and Import of Nuclear Facilities and Materials."

Paragraph 50.34(c) of 10 CFR Part 50 and paragraphs 70.22(g), 70.22(h), and 70.22(k) of 10 CFR Part 70 identify the physical protection information that must be provided in a Physical Security Plan as part of a license application. This plan is required in order for the applicant to demonstrate compliance with the specific physical protection requirements of 10 CFR Part 73 and must be submitted with each application for a license to possess or use SNM (or for a license authorizing transport or delivery of SNM), except for a license to possess, use, or transport less than 10 kg of SNM of low strategic significance, in which case a physical security plan is not required. However, the licensee is required to

meet the requirements of § 73.47 for the protection of SNM of low strategic significance.

This regulatory guide describes the information required in the physical security plan submitted as part of an application for a license to possess, use, or transport SNM of moderate strategic significance or 10 kg or more of SNM of low strategic significance and recommends a standard format for presenting the information in an orderly arrangement. This standard format will thus serve as an aid to uniformity and completeness in the preparation and review of the physical protection plan of the license application. This document can also be used as guidance by licensees possessing or transporting less than 10 kg of SNM of low strategic significance in understanding the intent and implementing the requirements of paragraphs 73.47(a), 73.47(f), and 73.47(g) of 10 CFR Part 73.

Aside from providing guidance for the standard format and content of physical security plans, this regulatory guide explains the intent of the various provisions of the regulation. The intent of each requirement is found in the discussion of each subsection and is implicitly provided by outlining alternative systems that could be used to fulfill the requirements. The discussion section and list of alternatives should provide the licensee with the sense of the NRC regulations.

This guide is divided into two parts. Part I, "SNM of Moderate Strategic Significance," provides a standard format for preparing the licensee's security plans and provides guidance to licensees who possess, use, or transport SNM of moderate strategic significance. Chapters 1 through 6 of Part I apply to applications for a license to possess or use at any fixed site, or at contiguous sites subject to control by the licensee, SNM of moderate strategic significance. Chapters 7 through 11 of Part I apply to applications for authorization to transport or deliver to a carrier for transport SNM of moderate strategic significance.

Part II, "SNM of Low Strategic Significance," provides a standard format for preparing the licensee's security plan for licensees who possess, use, or transport more than 10 kg of SNM of low strategic significance. It also provides guidance to all licensees who possess, use, or transport SNM of low strategic significance. Chapters 1 through 4 of Part II apply to applications for a

license to possess or use at any fixed site, or at contiguous sites subject to control by the licensee, more than 10 kg of SNM of low strategic significance. Chapters 5 through 9 of Part II apply to applications for authorization to transport or deliver to a carrier for transport more than 10 kg of SNM of low strategic significance.

Table 1 shows the type and amount of SNM covered in 10 CFR § 73.47. It should be noted, as stated in the footnote to Table 1, that (1) plutonium with an isotopic concentration exceeding 80% or more in Pu-238, (2) special nuclear material that is not readily separable from other radioactive material and that 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, and (3) sealed plutonium-beryllium neutron sources totaling 500 grams or less of contained plutonium at any one site or contiguous sites are exempt from the requirements of 10 CFR § 73.47.

This guide has been prepared to minimize lost time attributable to incomplete physical security plans and to standardize the review process. The applicant is encouraged to prepare his physical security plan in accordance with this guide and to provide information in each section to support the conclusion that he will be able to operate in accordance with the pertinent regulations. Although conformance with this guide is not required, the format and content presented are acceptable to the NRC staff.

As developments and changes in the nuclear industry occur, the Commission's requirements for information may need modification; revisions to this guide will be made as necessary to accommodate these changes.

#### Purpose and Applicability

This standard format has been prepared as an aid to uniformity and completeness in the preparation and review of the physical protection section of license applications and to clarify the intent of the regulations. The information this guide contains will help the licensee plan a physical protection system designed to detect the theft of SNM of moderate or low strategic significance. The physical

TABLE 1  
CATEGORIES OF SPECIAL NUCLEAR MATERIAL

MATERIAL*	ENRICHMENT	MODERATE STRATEGIC SIGNIFICANCE	LOW STRATEGIC SIGNIFICANCE
1. Plutonium	--	Less than 2,000 g but more than 500 g	500 g or less but more than 15 g
2. Uranium-235	20% or more in U-235 isotope	Less than 5,000 g but more than 1,000 g	1,000 g or less but more than 15 g
	10% or more but less than 20% in U-235 isotope	10,000 g or more	Less than 10,000 g but more than 1,000 g
	Above natural but less than 10%	--	10,000 g or more
3. Uranium-233	--	Less than 2,000 g but more than 500 g	500 g or less but more than 15 g
4. Uranium-235, uranium-233, and plutonium in combination	U-235 portion enriched to 20% or more.	Less than 5,000 g according to the formula: grams = (grams contained U-235) + 2.5 (grams U-233 + grams plutonium) but more than 1,000 g according to the formula: grams = (grams U-235) + 2.0 (grams U-233 + grams plutonium)	1,000 g or less according to the formula: grams = (grams contained U-235) + 2.0 (grams U-233 + grams plutonium) but more than 15 g according to the formula: grams = grams contained U-235 + grams U-233 + grams plutonium.

\*The following materials are exempt:

1. Special nuclear material that is not readily separable from the radioactive material and that 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,
2. Plutonium with an isotopic concentration of 80% or more in Pu-238, and
3. Sealed plutonium-beryllium neutron sources totaling 500 grams or less of contained plutonium at any one site or contiguous sites.

protection subsystems identified are intended to provide a reference physical protection system that would normally be capable of meeting the performance requirements of paragraph 73.47(a) of 10 CFR Part 73. However, it is recognized that at any particular site there may be some subsystems and components not needed or additional ones needed to meet these performance requirements. In these cases, the applicant is encouraged to address in the license application specific departures of subsystems or components from this guide.

The information requested in this guide is the minimum needed for the review of a physical security plan. Additional information may be required for completing the staff review of a particular plan and should be included as appropriate. It is also the applicant's responsibility to be aware of new and revised NRC regulations. The information provided should be up to date with respect to the state of technology for the physical protection techniques and systems that the applicant proposes to use.

Information and procedures delineated in the regulatory guides in Division 5, "Materials and Plant Protection," that are appropriate to certain sections of the physical security plan may be incorporated by reference.

The applicant should discuss his plans and programs with the NRC staff before preparing the application. This discussion should give particular emphasis to the depth of information required for the plan.

Upon receipt of an application, the NRC staff will perform a preliminary review to determine whether the application provides a reasonably complete presentation of the information needed to form a basis for the findings required before issuance of a license. The standard format will be used by the staff as a guideline for identifying the type of information needed. If an application does not provide a reasonably complete presentation of the necessary information, further review of an application will be suspended until this needed information is provided.



### Use of the Standard Format

The applicant should follow the numbering system of the Standard Format down to the level of section (e.g., 3.4). Under some circumstances certain sections may not be applicable to a specific application. If so, this should be clearly stated and sufficient information should be provided to support that conclusion.

The applicant may wish to submit in support of his application information that is not required by regulations and is not essential to the description of the applicant's physical protection program. Such information could include, for example, historical data submitted in demonstration of certain criteria, discussion of alternatives considered by the applicant, or supplementary data regarding assumed models, data, or calculations. This information should be provided as an appendix to the application.

Upon completion of the application, the applicant should use the Table of Contents of the Standard Format as a checklist to ensure that each subject has been addressed.

### Style and Composition

A table of contents should be included in each submittal.

✓ The applicant should strive for clear, concise presentation of information. Confusing or ambiguous statements and general statements of intent should be avoided. Definitions and abbreviations should be consistent throughout the submittal and consistent with generally accepted usage.

Wherever possible, duplication of information should be avoided. Thus, information already included in other sections of the applications may be covered by specific reference to those sections.

Where numerical values are stated, the number of significant figures should reflect the accuracy or precision to which the number is known. The use of relative values should be clearly indicated.

Drawings, diagrams, and tables should be used when information may be presented more adequately or conveniently by such means. These illustrations should be located in the section where they are first referenced. Care should be taken to ensure that all information presented in drawings is legible, that symbols are defined, and that drawings are not reduced to the extent that they cannot be read by unaided normal eyes.

#### Physical Specifications of Submittals

All material submitted in an application should conform to the following physical dimensions of page size, quality of paper and inks, numbering of pages, etc.:

1. Paper Size

Text pages: 8-1/2 x 11 inches.

Drawings and graphics: 8-1/2 x 11 inches preferred; however, a larger size is acceptable provided the finished copy when folded does not exceed 8-1/2 x 11 inches.

2. Paper Stock and Ink

Suitable quality in substance, paper color, and ink density for handling and for reproduction by microfilming.

3. Page Margins

A margin of no less than one inch is to be maintained on the top, bottom, and binding side of all pages submitted.

4. Printing

Composition: text pages should be single spaced.

Type face and style: must be suitable for microfilming.

Reproduction: may be mechanically or photographically reproduced. All pages of the text may be printed on both sides, and images should be printed head to head.

5. Binding

Pages should be punched for looseleaf ring binding.

6. Page Numbering

Pages should be numbered by section and sequentially within the section. Do not number the entire report sequentially. (This entire Standard Format has been numbered sequentially because the individual chapters were too short for sequential numbering within each section to be meaningful.)

7. Format References

In the application, references to this Standard Format should be by chapter and section numbers.

Procedures for Updating or Revising Pages

The updating or revising of data and text should be on a replacement page basis.

The changed or revised portion of each page should be highlighted by a vertical line in the margin opposite the binding margin for each line changed or added. All pages submitted to update, revise, or add pages to the report should show the date of the change. The transmittal letter should include an index page listing the pages to be inserted and the pages to be removed. When major changes or additions are made, pages for a revised table of contents should be provided.

Number of Copies

The applicant should submit the appropriate number of copies of each required submittal pursuant to 10 CFR § 70.21.



### Public Disclosure

The NRC has determined that the public disclosure of the details of physical protection programs is not in the public interest, and such details are withheld pursuant to paragraph 2.790(d) of 10 CFR Part 2. Thus the physical protection section of each application should be submitted as a separate enclosure. Other proprietary and classified information should be clearly identified and submitted in separate enclosures. Each such submission of proprietary information should be accompanied by the applicant's detailed reasons and justifications for requesting exemption from public disclosure as required in paragraph 2.790(b) of 10 CFR Part 2.

PART I SNM OF MODERATE STRATEGIC SIGNIFICANCE

✓ CHAPTER 1 USE AND STORAGE AREA

This chapter provides guidance on meeting the requirements of paragraphs 73.47(d)(1) and (d)(2), which are as follows:

- (d)(1) Use the material only within a controlled access area which is illuminated sufficiently to allow detection and surveillance of unauthorized penetration or activities.
- (d)(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.

✓ A controlled access area (CAA) is defined in paragraph 73.2(z) as "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." Thus a CAA can be an approved security cabinet with a lock to which only authorized individuals have the combination or key, a vault or vault-type room that uses some type of access control system to limit access to authorized individuals, a locked laboratory for which only authorized individuals such as professors or lab instructors have the combination or key, or any open area whose boundaries are clearly defined and into which access of personnel is controlled. The regulations as written are designed to allow the licensee a great deal of flexibility in meeting the requirements in a cost-effective manner.

X 1.1 AREA WHERE MATERIAL IS USED (73.47(d)(1))

Intent

Temporarily established CAAs for the use of SNM need not have permanent physical barriers at their boundaries. Office partitions, cordons, or other devices can be used to warn passersby of the restricted nature of the area,

while access control can be effected through surveillance or supervision of the area by those using the SNM at the time. However, if the material is to be left unattended in such an area, additional protection must be provided to control access and ensure a detection capability in the absence of authorized personnel. This could be accomplished, for example, through the posting of signs and the use of motion detection equipment covering the immediate area in which the SNM is located. Although the material may be considered in "use," protection requirements would be the same as though the material were in storage, since authorized personnel would not be present.

Permanently designated areas for the use of SNM would more closely approximate CAAs intended for the storage of SNM. In this case, a more likely choice would be permanent physical barriers such as those that would be provided in the case of a laboratory or reactor containment structure in which it was desired to have SNM continuously present and in use. Such an area may also serve as a storage area. Although access control and detection capabilities may be provided through the use of appropriate hardware during the period when SNM is stored in this area, other means of providing these capabilities may be required to complement such hardware if alarms are deactivated or doors are unlocked. In such cases, licensees may rely on authorized personnel to effect the required protection.

Illumination sufficient to allow detection and surveillance of unauthorized penetration or activities within the CAA where the material is used need not require the use of high-intensity lighting throughout the CAA. What is intended is the use of normal lighting sufficiently uniform throughout the CAA to ensure that material or unauthorized personnel cannot be secreted in a darkened area until a time more convenient for the unauthorized removal of the material. For those facilities where experiments must be conducted in a darkened room, the lighting requirement is exempted for as long as is needed provided access control is ensured and the material is accounted for at the end of the experiment.

#### Content

Describe the CAA where the material will be used. Include in this description information on the type of barriers surrounding the material, the portals

that allow access to the material, the size of the area, the permanence of the CAA, the use of the CAA (e.g., laboratory, process area, reactor room), the lighting level and uniformity provided to allow detection and surveillance of unauthorized penetration or activities; state whether the material will also be stored there.

## 1.2 AREA WHERE MATERIAL IS STORED (73.47(d)(2))

### Intent

CAAs used for the storage of SNM should provide protection against theft equivalent to a vault-type room or an approved security cabinet. A vault-type room is defined in 10 CFR § 73.2 as "a room with one or more doors, all capable of being locked, protected by an intrusion alarm which creates an alarm upon the entry of a person anywhere into the room and upon exit from the room or upon movement of an individual within the room." An approved security cabinet is one that is designed to afford protection against surreptitious entry and lock manipulation and has been approved by the General Services Administration or other standards organization (e.g., ANSI) as being equivalent to a class 6 GSA rating or better.

A vault-type room, by definition, must be protected by motion detection equipment. This is considered a valid tradeoff for the physical barrier protection offered by the security cabinet. The vault-type room can be a locked laboratory, a supply room, or a closet equipped with a tamper-resistant motion detector. The motion detector generally would also satisfy the monitoring requirement addressed in Chapter 2 of this guide, depending on site-specific considerations. By "equivalent to a vault-type room" is meant that a piece of equipment (such as a fission chamber, reactor core, or storage rack), even though it does not resemble a "room," may meet the storage requirement if there is a means of controlling access to it (e.g., a locked grill, inaccessibility beneath water as in a storage pool) and it is protected with a tamper-resistant motion detection system.

The illumination level required for the CAA should be sufficiently uniform and bright to detect penetration of or tampering with the CAA (i.e., an approved

security cabinet) or unauthorized penetration of or activities within the CAA (i.e., a vault-type room).

#### Content

Describe in detail the CAA in which the material will be stored. Include in this description information on the type of barriers surrounding the material, the portals that allow access to the material, the size of the area, the type of CAA (e.g., vault-type room, vault, security cabinet), and the location and level of lighting provided to allow detection of unauthorized penetration or activities. If a vault-type room is used to store the material, describe in Section 2.1 the type of intrusion alarm system used there. If a security cabinet is used, describe in Section 3.3 the type of locking system used.

### ✓ CHAPTER 2 DETECTION DEVICES OR PROCEDURES

This chapter provides guidance for meeting the requirement of paragraph 73.47(d)(3):

- (d)(3) Monitor with an intrusion alarm or other device or procedures the controlled access areas to detect unauthorized penetration or activities.

In order to help detect unauthorized activities or penetrations of CAAs where the material is used or stored, either (1) intrusion alarms or other devices or (2) security procedures are needed. Section 2.1 provides guidance for a licensee who chooses to use intrusion alarms or devices, and Section 2.2 provides guidance for a licensee who chooses to use security procedures.

#### ✶ 2.1 DETECTION DEVICES (73.47(d)(3))

##### Intent


For CAAs where the material is used, the licensee will probably wish to rely on personnel-oriented procedures for ensuring that the CAA is not penetrated inadvertently or purposefully by unauthorized personnel while the material is in

use. However, material left temporarily unattended should be protected by a motion detector (e.g., suspended from above) that incorporates adequate tamper-resistant features. Licensees should design their systems to minimize the rate of spurious or false alarms through proper installation and procedures.

For CAAs where the material is stored, the detection capability will be satisfied through the use of motion detection equipment. However, the detection capability requirement may also be satisfied by different types of safety detection devices or security procedures. Information regarding intrusion alarm devices that could be used is available in NUREG-0320.\* However, any choice of detection device, intrusion or safety, must include tamper-resistant features.

#### Content

Describe the tamper-resistant intrusion alarm devices or tamper-resistant safety devices that are used to monitor the CAA where the material is used and stored. This description should include:

- 
1. Type of device used with brief theory of operation,
  2. Location of detection device,
  3. Type and location of annunciation,
  4. Area of coverage,
  5. Tamper-resistant features,
  6. Signal line protection features,
  7. Emergency power features for devices, and
  8. Conditions under which the detection device will be used.

#### ✓ 2.2 DETECTION PROCEDURES (73.47(d)(3))

#### Intent

Licensees may choose to provide the required detection capability during certain periods through reliance on personnel-oriented procedures rather than by

\* NUREG-0320, "Interior Intrusion Alarm Systems." Copies may be obtained from the National Technical Information Service, Springfield, Virginia 22161.



the use of detection devices. This may be desirable during periods of heavy usage of material when frequent traffic into and out of a CAA may make the use of an intrusion alarm system inconvenient. (Authorized personnel engaged in the use of the material or otherwise present within the CAA or its immediate vicinity may satisfy the detection capability requirement provided they can reasonably maintain surveillance over the material and control access to the CAA or its immediate vicinity while carrying on whatever other activities they may be engaged in.) In the absence of detection devices, at least one authorized person should be present at all times that the material is in use.

X { If the material is in storage in an approved security cabinet or its equivalent, the material may be left unattended without an intrusion alarm system provided some other detection procedure is employed. This may include remote surveillance using a closed circuit television system or randomized periodic patrols by a watchman or campus police.

#### Content

Describe the procedures that are used or may be used to monitor the controlled access areas where the material is used or stored. These descriptions should include the conditions under which the procedures would be used; the CAAs for which the procedures would be used; the individuals, categories of individuals, or personnel positions assigned to carry out procedures; the devices used in conjunction with the procedures; other assignments or activities to be performed by personnel concurrently with their execution of detection procedures; the provisions for documentation of inspection procedures being executed (e.g., a log); a description of the procedures themselves; and any techniques employed for randomization of patrols.

### X CHAPTER 3 ACCESS CONTROL

This chapter provides guidance on meeting the requirements of paragraphs 73.47(d)(4), (d)(5), (d)(6), (d)(7), and (d)(10), which are as follows:

- (d)(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,
- (d)(5) Develop and maintain a controlled badging and lock system to identify and limit access to the controlled access areas to authorized individuals,
- (d)(6) Limit access to the controlled access areas to authorized or escorted individuals who require such access in order to perform their duties,
- (d)(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,
- (d)(10) Search on a random basis vehicles and packages leaving the controlled access areas.

X  
3.1 PREAUTHORIZATION SCREENING (73.47(d)(4))

Intent

The intent of the requirement for preauthorization screening is to ensure that the licensee will have sufficient knowledge of an individual to determine his reliability and need for access prior to granting him authorized access to the CAA where the material is used or stored. The selection of procedures for conducting this examination and the criteria he employs to make his judgments are the responsibility of the licensee and, of course, should be consistent with all local, State, and Federal laws and regulations regarding the protection of the privacy and other rights of the individual. The screening process may be conducted in the same manner as other investigations customarily conducted by potential employers for similarly sensitive positions. There is no requirement for the licensee to arrange for an NRC clearance or similar clearance from any other government organization. Examples of procedures and criteria that may be employed in the screening process include holding or having recently held a



government-sanctioned clearance; examination of past employment or educational records (to determine any unsatisfactory employment or school actions or incidents that would indicate any unreliability or previous breaches of trust between the individual and his employer); endorsements or references from previous employers, teachers, or colleagues that would support a decision for granting access or that would attest to the trustworthiness and reliability of the individual; and consideration of the individual's present employment record indicating demonstrated trustworthiness and reliability over an extended period of employment with the licensee. ) This may be considered in the nature of "grandfathering.")

#### Content

Describe the procedures and criteria that will be used for obtaining sufficient information prior to making a decision on granting unescorted access authorization to an individual to CAAs where the material is used or stored. Identify the types of individuals who will be screened (e.g., process engineers, supervisory personnel, professors, instructors, graduate students) and who will perform the screening process.

### ✓ 3.2 BADGING SYSTEM (73.47(d)(5))

#### Intent

✓ The purpose of the badging system is to facilitate the identification of authorized individuals and the control of access to or within the CAA where the material is used or stored. Information on the badge should be such that it is possible to clearly distinguish personnel authorized for access to the CAAs from those requiring an escort. Information on the badge should also uniquely identify the individual possessing the badge. This personalized information can be obtained through the use of photographs, personal vital statistics, signatures, or any means the licensee may wish to use that will uniquely identify the individual.

### Content

Describe the badging system used to facilitate control of access to the CAAs. This description should include:

1. The size, shape, color, material, and construction of badges.
2. The distinguishing features of the badge that identify authorized individuals from escorted individuals.
3. How the badges will be used for controlling access. (For example, will all individuals be checked prior to entering the CAAs, will periodic checks be made of individuals within a CAA to determine if they are authorized or under escort, or will the badge itself permit authorized entrance, e.g., a card key.)
4. The system used for issuing, controlling, and accounting for the badges.

### ✓ 3.3 LOCK SYSTEM (73.47(d)(5))

#### Intent

Locks used to control access to CAAs should be resistant to manipulation or picking and should not be mastered. Examples of typical lock systems that fit this description are three-position dial-type combination locks, six-pin key locks and card-key lock systems. The procedures for assigning keys and combinations to individuals is an integral part of the lock system and should be designed to ensure that only authorized personnel have access to such items. Locks and combinations should be changed when information is obtained that the lock system may have been compromised. Further information may be obtained in Regulatory Guide 5.12, "General Use of Locks in the Protection and Control of Facilities and Special Nuclear Material."

#### Content

Describe the locking system used to control access to the CAAs where material is used and stored. This description should include locations of all locks

included in the system by type of lock, the pick-resistant and manipulation-resistant characteristics of each lock type used, personnel responsible for issuing keys or combinations and changing combinations or locks, criteria for changing combinations or locks, personnel authorized to be given keys or combinations, and descriptions of types of locks used (references may be made to Regulatory Guide 5.12 for this purpose).

### ✓ 3.4 ACCESS CONTROL (73.47(d)(6))

#### Intent

The success of other access control system components, such as preauthorization screening, badging, and lock control, is dependent upon effective control of personnel access into the CAA. Physical access may be controlled in a number of different ways depending upon the actual configuration of the CAA and other site specific factors. Some examples of these alternatives are:

1. Control by Authorized Person. If the area to be controlled is sufficiently small and free of obstructions, an authorized person performing other activities in a CAA may effect physical access control by monitoring entry of unauthorized persons into the area. A sign posted at the entrance would help deter casual passersby. A typical application of this approach would be the case of a laboratory instructor conducting a class in which he is familiar with each of his students and could easily recognize unauthorized persons not in the class.

2. Card-Key, Combination, or Key-Lock Control System. A more sophisticated hardware-oriented system involves the use of a card-key, combination, or key-lock system. Physical access control in this case consists of the use of physical barriers to deter unauthorized persons. A limited number of entrances that are controlled by authorized personnel using a card key, combination, or key are provided. This system may be more useful when larger numbers of authorized personnel who would not necessarily be familiar with one another need to share the use of the CAA.

3. Control by Security Organization. If security organization personnel are available, physical access control may be accomplished by stationing a person at the entrance to the CAA to check identification and allow only authorized persons into the CAA. This alternative may be unjustifiably expensive unless the security organization member's salary can be justified on other grounds as well. A variation of this system requires persons seeking entrance to the CAA to obtain a key from a properly designated person or security organization for each use.

#### Content

Describe the system for limiting physical access to each CAA identified in Sections 1.1 and 1.2 to authorized personnel or those escorted by authorized personnel. Include in this description the names or titles of individuals granting access authorizations, the criteria to be used in granting authorizations, and the procedures used to ensure that only authorized or properly escorted persons are allowed access to the CAA. Reference can be made to Sections 3.1, 3.2, 3.3, 3.5, and 3.6 of this chapter as they apply to this section for the description of locks, barriers, or other hardware that are used to control access.

#### ✓ 3.5 ESCORT SYSTEM (73.47(d)(7))

#### Intent

The requirement that an escort system be established is in recognition of the fact that the licensee may wish to allow access to certain persons or classes of persons on a temporary or infrequent basis or on short notice, thus making the routine process for granting access authorizations impractical or inexpedient. Typical arrangements for escorted access may include escorts for maintenance or repair personnel, laboratory classes, public tours, guests, and visitors as required. )

## Content

Describe the system that will be used to escort individuals in the CAAs. In his security plan, the licensee should ensure that only properly authorized individuals will be allowed to escort individuals. This description should include:

1. Criteria to be used for granting escorted access,
2. Criteria to be used for escorting others,
3. Procedures for escorting individuals into CAAs (e.g., students under supervision of lab instructor, public tours),
4. The number of escorted individuals per escort, and
5. The responsibilities of the escort (e.g., periodic surveillance of all individuals under escort, accounting for all material prior to leaving the CAA, remaining in general area during the time unauthorized individuals are present).

### 3.6 SEARCH (73.47(d)(10))

## Intent

The primary intent of the search requirement is to deter and possibly detect attempted thefts of SNM. The search procedures developed by the licensee should take into consideration the environs where the material is used or stored, the physical characteristics of the material itself, and the frequency of accounting for the material. In some cases, this will require that all vehicles and packages leaving the CAAs be searched in a random manner. The frequency of random searches should be determined by the ease with which the material can be stolen and the length of time it would take to detect a theft. In other cases, only packages that equal or exceed the size of the material being used or stored would have to be searched, taking into consideration the difficulty with which the material could be broken into smaller more easily concealed parts.

## Content

Describe the system to be used for randomly searching vehicles or packages that leave the CAA. Include in the description information as to:

1. The scope of the search. This should identify the criteria that will be used for searching vehicles and packages (e.g., whether all packages and vehicles are subject to search or just those packages or vehicles that are larger than the smallest configuration of material being used or stored).
2. The randomness of the search. The scheme for selecting the packages or vehicles to be searched should be identified (e.g., subjecting each package or vehicle to a search, using a random number generator for determining whether a candidate package or vehicle is to be searched, searching a minimum percentage of all packages or vehicles leaving the CAA each day).

## ✓ CHAPTER 4 SECURITY ORGANIZATION

This chapter provides guidance on meeting the requirements of paragraph 73.47(d)(8), which states:

- (d)(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.

## Intent

The intent of this requirement is to ensure that, in the event of a security incident, someone will be available to assess alarms or other unauthorized penetrations or activities and, if warranted, notify the NRC, the local law enforcement authorities, and the responsible person in licensee management. Early detection and notification of any missing material will help facilitate its prompt recovery.

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\* A "watchman" is defined in 10 CFR § 73.2 as "an individual, not necessarily uniformed or armed with a firearm, who provides protection for a plant and the special nuclear material therein in the course of performing other duties."



In some cases, the licensee may assign additional duties to members of the security organization where procedure-oriented options are chosen to satisfy physical protection requirements (e.g., periodic patrols and inspections of CAAs for storage of SNM). Security organization members are not required to be fully dedicated full-time employees of the licensee. They may include unarmed campus security personnel (watchmen), contract guards, members of the local law enforcement agency (if sufficiently close to the site), etc. No formal or comprehensive training program is required for security organization personnel. However, under Appendix B to 10 CFR Part 73, the licensee should be prepared to demonstrate that each security person understands the particular duties assigned to him and is fully qualified and trained to perform them.

#### Content

Describe the security organization that will be responsible for assessing and responding to security incidents. Indicate the other responsibilities of the security organization such as:

1. Conducting periodic physical security checks of CAAs,
2. Maintaining liaison with the local law enforcement agency,
3. Notifying the local law enforcement agency of any unauthorized penetrations or activities in the CAAs, and
4. Notifying licensee management of any unauthorized penetrations or activities in the CAAs.

#### CHAPTER 5 COMMUNICATIONS

This chapter provides guidance on meeting the requirements of paragraph 73.47(d)(9), which states:

- (d)(9) Provide a communication capability between the security organization and appropriate response force.



### Intent

The intent of this regulation is to ensure that a communication capability exists between the licensee and the designated response force. It is implied that, prior to setting up a communication capability, procedures and responsibilities will have been established between the response force and the licensee. (See Chapter 6, "Response Procedures.") The type of communication system chosen by a licensee should:

1. Provide for full duplex voice communication capability,
2. Be easily accessible to the licensee's security organization, and
3. Be reliable and available for immediate use at any time.

Some communication systems that would provide these capabilities are a dedicated telephone system, a non-dedicated public telephone system, radio, or any combination thereof.

### Content

Describe the communication system that is used between the security organization and the appropriate response force. This description should include information on:

1. Type of communication system,
2. Location of voice terminals in relationship to CAAs,
3. Availability of communication system on a 24-hour basis, and
4. Reliability of communication system.



## CHAPTER 6 RESPONSE PROCEDURES

This chapter provides guidance on meeting the requirements of paragraph 70.47(d)(11), which states:

- (d)(11) Establish and maintain response procedures for dealing with threats of thefts or thefts of such materials.

#### Intent

The intent of this regulation is to help the licensee to identify those security incidents that could result in the loss of SNM of moderate strategic significance and to develop response procedures to prevent or reduce the likelihood of such a loss. Some types of incidents that should be considered and for which response procedures should be developed are:

1. Civil strife such as student demonstrations or employee strikes,
2. Fire,
3. Discovery that some SNM is missing, and
4. Bomb threats.

#### Content

Identify those events for which response procedures will be developed. Also, describe the type of response to be accomplished for each event identified and the duties and responsibilities of the security organization and management involved in the response. Ensure that the NRC will be notified immediately in the event of theft or attempted theft of the material. Describe what local law enforcement assistance is available, their response capabilities, and any agreements made with them to respond in the case of theft of the material.

### CHAPTER 7 MATERIAL TRANSPORTATION REQUIREMENTS

N <sup>15</sup> This chapter provides guidance on meeting the requirements of paragraph 73.47(e)(1), which are as follows:

- (e)(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 paragraph 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.

#### 7.1 ADVANCE NOTIFICATION (73.47(e)(1)(i))

##### Intent

The intent of this paragraph is to require the shipper to preplan the transportation of material and inform the receiver of his plans prior to shipment. This is the first of the several transportation requirements that will allow the receiver to take delivery of the material as planned or to help ensure traceability of any missing material.

##### Content

The licensee should ensure in his security plan that, prior to each shipment of material, the receiver will be notified of the impending shipment and provided the following types of information:

1. Mode of transport (e.g., truck, plane, train, or ship),
2. Estimated time of arrival,
3. Location where material is to be transferred to receiver,
4. Name of carrier, and
5. Transport identification (e.g., truck, train, or flight number; ship name).

## 7.2 RECEIVER CONFIRMATION (73.47(e)(1)(ii))

### Intent

The intent of this requirement is that, prior to shipment, the shipper will be assured that the receiver is ready to accept the shipment at the planned time and location and has acknowledged the mode of transport.

### Content

Describe what procedures will be used to ensure that shipment of material does not take place until the receiver acknowledges the planned shipment and mode of transport and states that he will be ready to accept the shipment at the planned time and location.

## 7.3 CONTAINER (73.47(e)(1)(iii))

### Intent

The intent of this requirement is to provide a mechanism or system that will help the receiver detect any tampering with the material's container that may have occurred during shipment. Regulatory Guide 5.15, "Security Seals for the Protection and Control of Special Nuclear Material," provides guidance in this area. Requirements for containers are contained in 10 CFR Part 71 and a summary report on approved containers is contained in NUREG-0383.\*

\*NUREG-0383, "Directory of Certificates of Compliance for Radioactive Materials Packages." Copies may be obtained from the National Technical Information Service, Springfield, Virginia 22161.

#### Content

Describe the types of seals that will be used to monitor the material's container during transport.

#### 7.4 INSPECTION (73.47)(e)(iv))

#### Intent

The intent of this paragraph is to require the shipper to check the integrity of the material container's seals just prior to shipment so that he can be assured that they have not been compromised. Then, upon receipt of the shipment, if the receiver discovers that the container's integrity has been compromised and the material is missing, the scope of the recovery operation can focus on the transportation route.

#### Content

Describe the procedures to be used to ensure that the integrity of the containers or seals is checked just prior to shipment.

#### 7.5 IN-TRANSIT PHYSICAL PROTECTION (73.47(e)(1)(v))

#### Intent

The intent of this paragraph is to require that either the shipper or receiver be made responsible for the physical protection of the material while it is in transit and that the responsible licensee has acknowledged this responsibility by written agreement.

#### Content

In his security plan, the shipper should either acknowledge responsibility for the in-transit physical protection of SNM of moderate strategic significance

or ensure that a written agreement from the receiver licensee has been received in which the receiver accepts either full responsibility or shared responsibility for the in-transit physical protection of this material in accordance with paragraph 73.47(e)(3) of 10 CFR Part 73.

## CHAPTER 8 RECEIVER REQUIREMENTS

This chapter provides guidance on meeting the requirements of paragraph 73.47(e)(2), which are as follows:

- (e)(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.

### 8.1 INSPECTION (73.47(e)(2)(i))

#### Intent

This requirement is intended to determine whether the material's container has been compromised enroute and whether any material has been removed so that immediate recovery procedures can be initiated if required.

### Content

Describe the procedures to be used to ensure that the integrity of the containers and seals will be checked upon receipt of the shipment of material.

### 8.2 NOTIFICATION (73.47(e)(2)(ii))

#### Intent

This requirement is intended to:

1. Ensure that knowledge of the current location of all SNM is available, and
2. Formally inform the shipper that the material has been received.

#### Content

Ensure that a completed copy of standard Form NRC-741, "Nuclear Material Transaction Report," will be sent to the shipper within 10 days of receiving a shipment of material as required in § 70.54 of 10 CFR Part 70.

### 8.3 IN-TRANSIT PHYSICAL PROTECTION (73.47(3)(2)(iii))

#### Intent

The intent of this paragraph is to require that either the licensee receiver or shipper be made responsible for the physical protection of the material while it is in transit and that the responsible licensee has acknowledged this responsibility by written agreement.

#### Content

In his security plan, the receiver should either acknowledge responsibility for the in-transit physical protection of SNM of moderate strategic significance or ensure that a written agreement from the shipper has been received in which the



shipper accepts either full responsibility or shared responsibility for the in-transit physical protection of this material in accordance with paragraph 73.47(e)(3) of 10 CFR Part 73.

#### CHAPTER 9 IN-TRANSIT PHYSICAL PROTECTION REQUIREMENTS

This chapter provides guidance on meeting the requirements of paragraph 73.47(e)(3), which are as follows:

- (e)(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 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.

#### 9.1 COMMUNICATIONS (73.47(e)(3)(i))

##### Intent

The primary intent of this requirement is to ensure that the carrier will notify the shipper or receiver of any changes in plans or delays in the scheduled arrival of a shipment to its destination due to mechanical breakdown, adverse environmental conditions, public disorders, etc. The shipper or receiver can then decide whether or not to initiate response procedures. It is not the intent of this regulation to require periodic check-in. Public telephone or full duplex voice radio are acceptable methods for meeting the intent of this requirement.

##### Content

Describe the type of communication system and procedures to be used by the carrier or SNM of moderate strategic significance for notifying the shipper or receiver of any change in plans or delays in arrival.

#### 9.2 MINIMUM TRANSIT TIMES (73.47(e)(3)(ii))

##### Intent

This requirement is intended to have the shipper or receiver make a reasonable effort to ship the material by the fastest and most direct method possible.

It is not intended to require exclusive-use carriers or expensive modes of travel.

#### Content

Describe the procedures and considerations that apply in the transportation planning process to ensure that a determined effort will be made to minimize transit times.

### 9.3 PREAUTHORIZATION SCREENING (73.47(e)(3)(iii))

#### Intent

The intent of the requirement for preauthorization screening is to ensure that the licensee will have sufficient knowledge of an individual to determine his reliability and need for access prior to granting him authorized access to the material in transit. The selection of procedures for conducting this examination and the criteria he employs to make his judgments are the responsibility of the licensee and, of course, should be consistent with all local, State, and Federal laws and regulations regarding the protection of the privacy and other rights of the individual. The screening process may be conducted in the same manner as are other investigations customarily conducted by potential employers for similarly sensitive positions. There is no requirement for the licensee to arrange for an NRC clearance or similar clearance from any other government organization. Examples of procedures and criteria that may be employed in the screening process include holding or having recently held a government-sanctioned clearance; examination of past employment records (to determine any unsatisfactory employment or incidents that would indicate any unreliability or previous breaches of trust between the individual and his employer); endorsements or references from previous employers or colleagues that would support a decision for granting access or that would attest to the trustworthiness and reliability of the individual; and consideration of the individual's present employment record indicating demonstrated trustworthiness and reliability over an extended period of employment with the licensee. (This may be considered in the nature of "grandfathering.")

## Content

Describe the procedures that will be used for obtaining sufficient information prior to making a decision on granting unescorted access authorization to those licensee employees who will be involved in the transportation of the material. Identify by title or name those employees who will be screened and those who will perform the screening process.

### 9.4 RESPONSE PROCEDURES (73.47(e)(3)(iv))

## Intent

The intent of this regulation is to help the licensee to identify those transportation incidents for which he might expect to be notified and that might affect the security of the SNM in transit and to plan response procedures for such situations. For example, if the shipper is informed by the carrier that adverse weather conditions have temporarily prevented further progress of the shipment, the licensee should inform the receiver of a new estimated time of arrival.

## Content

Identify those events for which response procedures will be developed. Also, describe types of response to be accomplished for each event identified and the duties and responsibilities of members of the security organization and management for dealing with the response. Ensure that the NRC will be notified immediately in the event of theft or attempted theft of the material.

### 9.5 NOTIFICATION (73.47(e)(3)(v))

## Intent

The intent of this requirement is to ensure that the licensee responsible for the physical protection of SNM in transit will have a firm basis for deciding

whether or not to initiate response procedures in the event a shipment becomes overdue or is lost.

#### Content

Describe the arrangements and procedures that will be used for notifying the licensee who arranges for the physical protection of material in transit 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.

### 9.6 LOST MATERIAL NOTIFICATION (73.47(e)(3)(vi))

#### Intent

The intent of this requirement is to ensure that, in the event a shipment becomes overdue and no reasonable explanation has been received from the carrier regarding its status, a trace investigation will be conducted to locate the missing SNM. At this time, the NRC must be notified that the material is missing and informed as to what steps are being taken to recover the missing material. Although the licensee is responsible for notifying the NRC of any missing material and to initiate and assist in the subsequent investigation, the law enforcement agencies bear the responsibility for physically recovering the material.

#### Content

Describe what procedures will be used to trace any shipment that is lost or has not arrived by the estimated arrival time. Ensure that all lost or missing material will be immediately reported to the appropriate NRC Regional Office along with what actions are being taken to trace the shipment, that the NRC will be notified as specified in § 73.71, and that the shipper or receiver, as appropriate, will also be notified.

## CHAPTER 10 EXPORT REQUIREMENTS

This chapter provides guidance on meeting the requirements of paragraph 73.47(e)(4), which reads as follows:

- (e)(4) Each licensee who exports special nuclear material of moderate strategic significance shall comply with the requirements specified in § 73.47(c), (e)(1) and (e)(3).

Use Chapters 7 and 9 of this guide to describe the security procedures that will be used to protect the material up to the point where the receiver accepts physical protection responsibility for the shipment.

## CHAPTER 11 IMPORT REQUIREMENTS

This chapter provides guidance on meeting the requirements of paragraph 73.47(e)(5), which reads as follows:

- (e)(5) Each licensee 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.

### 11.1 SECURITY REQUIREMENTS (73.47(e)(5)(i))

Use Chapters 8 and 9 of this Standard Format to describe the security procedures that will be used to protect the material from the first point where the shipment is picked up inside the United States.



## 11.2 NOTIFICATION (73.47(e)(5)(ii))

### Intent

The intent of this requirement is to ensure that the exporter is notified that the material has arrived safely.

### Content

Describe the procedures to be used for notifying the exporter of the material that the shipment has been received.



## PART II SNM OF LOW STRATEGIC SIGNIFICANCE

### CHAPTER 1 USE AND STORAGE AREA

This chapter provides guidance on meeting the requirement of paragraph 73.47(f)(1), which is as follows:

(f)(1) Store or use such material only within a controlled access area.

A controlled access area (CAA) is defined in paragraph 73.2(z) as "any temporarily or permanently established clearly demarcated area, access to which is controlled and which affords isolation of the material or persons within it." Thus a CAA can be an approved security cabinet with a lock to which only authorized individuals have the combination or key, a vault or vault-type room that uses some type of access control system to limit access to authorized individuals, or a locked laboratory for which only authorized individuals such as professors or lab instructors have the combination or key.

#### 1.1 AREA WHERE MATERIAL IS USED (73.47(f)(1))

##### Intent

Temporarily established CAAs for the use of SNM need not have permanent physical barriers at their boundaries. Office partitions, cordons, or other devices can be used to warn passersby of the restricted nature of the area, while access control can be effected through surveillance or supervision of the area by those using the SNM at the time. However, if the material is to be left unattended in such an area, additional protection must be provided to control access and ensure a detection capability in the absence of authorized personnel. This could be accomplished, for example, through the posting of signs and the use of motion detection equipment covering the immediate area in which the SNM is located. Although the material may be considered in "use," protection requirements would be the same as though the material were in storage, since authorized personnel would not be present.

Permanently designated areas for the use of SNM would more closely approximate CAAs intended for the storage of SNM. In this case, a more likely choice would be permanent physical barriers such as those that would be provided in the case of a laboratory or reactor containment structure in which it was desired to have SNM continuously present and in use. Such an area may also serve as a storage area. Although access control and detection capabilities may be provided through the use of appropriate hardware during the period when SNM is stored in this area, other means of providing these capabilities may be required to complement such hardware in the event that alarms are deactivated or doors unlocked. In such cases, licensees may rely on authorized personnel to effect the required protection.

#### Content

Describe the CAA where the material will be used. Include in this description information on the type of barriers surrounding the CAA, the portals that allow access to the CAA, and the size of the area. Some typical CAAs where the material may be used are laboratories, process areas, reactor rooms, spent fuel pools, or fenced-in areas.

#### 1.2 AREA WHERE MATERIAL IS STORED (73.47(f)(1))

##### Intent

This area may be similar to that required for the storage of special nuclear material of moderate strategic significance (see Section 1.2 in Part I of this guide) but does not necessarily have to be equivalent to a vault, vault-type room, or approved security cabinet. Examples of typical CAAs where special nuclear material of low strategic significance may be stored are:

1. Vault. A vault is required to have barriers sufficiently strong to prevent or deter penetration and a locking mechanism on the door.
2. Approved Security Cabinets. The cabinets should be approved by GSA as class 6 or higher or by other testing groups for protection against surreptitious entry and lock manipulation.

3. Reactor. The reactor is so designed that it does not allow for easy removal of material.

4. Vault-Type Room. Some typical vault-type rooms where materials are stored and protected with a motion detector are storage pools, rooms containing in-process storage racks, and laboratories where material is left unattended. In all cases, movement in the near vicinity of the material should generate an alarm signal.

5. Locked Laboratories or Supply Rooms. These areas must be sufficiently penetration resistant to afford a means of access control and permit the proper functioning of the system for monitoring the storage area as required by paragraph 73.47(f)(2) of the rule as described in Part II, Chapter 2.

#### Content

Describe in detail the CAA in which the material will be stored. Include in this description information on the type of barriers surrounding the material, the portals that allow access to the material, the size of the area, and the locking mechanism used to secure the material (see Chapter 3 in Part I of this guide for guidance on locking mechanisms).

### CHAPTER 2 DETECTION DEVICES OR PROCEDURES

This chapter provides guidance for meeting the requirement of paragraph 73.47(f)(2), which is as follows:

- (f)(2) Monitor with an intrusion alarm or other device or procedures the controlled access areas to detect unauthorized penetrations or activities.

In order to help detect unauthorized activities or penetrations of CAAs where the material is used or stored, either (1) intrusion alarms or other devices or (2) security procedures are needed. Section 2.1 provides guidance for a licensee who chooses to use intrusion alarms or devices, and Section 2.2 provides guidance for a licensee who chooses to use security procedures.

## 2.1 DETECTION DEVICES (73.47(f)(2))

### Intent

For CAAs where the material is used the licensee will probably wish to rely on personnel-oriented procedures for ensuring that the CAA is not penetrated inadvertently or purposefully by unauthorized personnel. However, material left temporarily unattended should be protected by a motion detector (e.g., suspended from above) that incorporates adequate tamper-resistant features. Licensees should design their system to minimize the rate of spurious or false alarms through proper installation and procedures.

For CAAs where the material is stored, the detection capability will be satisfied through the use of motion detection equipment. However, the detection capability requirement may also be satisfied by different types of safety detection devices or security procedures. Information regarding intrusion alarm devices that could be used is available in NUREG 0320.\* However, any choice of detection device, intrusion or safety, must include tamper-resistant features.

### Content

Describe the tamper-resistant intrusion alarm devices or tamper-resistant safety devices that are used to monitor the CAAs where the material is used and stored. This description should include:

1. Type of device used with brief theory of operation,
2. Location of detection device,
3. Type and location of annunciation,
4. Area of coverage,
5. Tamper-resistant features,
6. Signal-line protection features,

\* NUREG-0320, "Interior Intrusion Alarm Systems." Copies may be obtained from the National Technical Information Service, Springfield, Virginia 22161.

7. Emergency power features for devices, and
8. Conditions under which detection devices will be used.

## 2.2 DETECTION PROCEDURES (73.47(f)(2))

### Intent

Licensees may choose to provide the required detection capability during certain periods through reliance on personnel-oriented procedures rather than by the use of detection devices. This may be desirable during periods of heavy usage of material when frequent traffic into and out of a CAA may make the use of an intrusion alarm system inconvenient. Authorized personnel engaged in the use of the material or otherwise present within the CAA or its immediate vicinity may satisfy the detection capability requirement provided they can reasonably maintain surveillance over the material and control access to the CAA or its immediate vicinity while carrying on the other activities they may be engaged in. In the absence of detection devices, at least one authorized person should be present at all times that the material is in use.

If the material is in storage in an approved security cabinet or its equivalent, the material may be left unattended without an intrusion alarm system provided some other detection procedure is employed. This may include remote surveillance using a closed-circuit television system or randomized periodic patrols by a watchman.

### Content

Describe the procedures that are used or may be used to monitor the controlled access areas where the material is used or stored. These descriptions should include the conditions under which the procedures would be used; the CAAs for which the procedures would be used; the individuals, categories of individuals, or personnel positions assigned to carry out procedures; the devices used in conjunction with the procedures; other assignments or activities to be performed by personnel concurrently with their execution of detection procedures; the provisions



for documentation of inspection procedures being executed (e.g., a log); and a description of the procedures themselves.

### CHAPTER 3 SECURITY RESPONSE

This chapter provides guidance on meeting the requirement of paragraph 73.47(f)(3), which is as follows:

- (f)(3) Assure that a watchman or offsite response force will respond to all unauthorized penetrations or activities.

#### Intent

The intent of this requirement is to ensure that, in the event of a security incident, someone will be available to assess alarms or any unauthorized penetrations or activities and, if warranted, notify the NRC, the local law enforcement authorities, and the responsible person in licensee management. Early detection and notification of any missing material will help facilitate its prompt recovery. For the purpose of this regulation, an offsite response force can be a local law enforcement agency or a contract guard service.

#### Content

Describe the security organization that will be responsible for assessing and responding to any unauthorized penetrations or activities. Ensure that at least one guard, watchman, or member of an offsite response force will respond to all unauthorized penetrations or security incidents at the CAAs.

### CHAPTER 4 RESPONSE PROCEDURES

This chapter provides guidance on meeting the requirements of paragraph 70.47(f)(4), which states:

- (f)(4) Establish and maintain response procedures for dealing with threats of thefts or thefts of such material.

### Intent

The intent of this regulation is to help the licensee to identify those security incidents that could result in the loss of SNM of low strategic significance and to develop response procedures to prevent or reduce the likelihood of such a loss. Some types of incidents that should be considered and for which response procedures should be developed are:

1. Civil strife such as student demonstrations or employee strikes,
2. Fire,,
3. Discovery that some SNM is missing, and
4. Bomb threats.

### Content

Identify those events for which response procedures will be developed. Also describe the type of response to be accomplished for each event identified and the duties and responsibilities of the security organization and management involved in the response. Ensure that the NRC will be notified immediately in the event of theft or attempted theft of the material. Describe what local law enforcement assistance is available, their response capabilities, and any agreements made with them to respond in the case of theft of the material.

## CHAPTER 5 MATERIAL TRANSPORTATION REQUIREMENTS

This chapter provides guidance on meeting the requirements of paragraph 73.47(g)(1), which are as follows:

(g)(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)(3) of this part, unless the receiver is a licensee and has agreed in writing to arrange for the in-transit physical protection.

#### 5.1 ADVANCE NOTIFICATION (73.47(g)(1(i))

##### Intent

The intent of this paragraph is to require the shipper to preplan the transportation of the material and inform the receiver of his plans prior to shipment. This is the first of the several transportation requirements that will allow the receiver to take delivery of the material as planned or to help ensure traceability of any missing material.

##### Content

The licensee should ensure that, prior to each shipment of material, the receiver will be notified of the impending shipment and provided the following types of information:

1. Mode of transport (e.g., truck, plane, train, or ship),
2. Estimated time of arrival,
3. Location where material is to be transferred to receiver,

4. Name of carrier, and
5. Transport identification (e.g., truck, train, or flight number; ship name).

#### 5.2 RECEIVER CONFIRMATION (73.47(g)(1)(ii))

##### Intent

The intent of this requirement is that, prior to shipment, the transporter will be assured that the receiver is ready to accept the shipment at the planned time and location and has acknowledged the mode of transport.

##### Content

Describe what procedures will be used to ensure that shipment of material does not take place until the receiver acknowledges the planned shipment and mode of transport and states that he will be ready to accept the shipment at the planned time and location.

#### 5.3 CONTAINER (73.47(g)(1)(iii))

##### Intent

The intent of this requirement is to provide a mechanism or system that will help the receiver detect any tampering with the material's container that may have occurred during shipment. Regulatory Guide 5.15, "Security Seals for the Protection and Control of Special Nuclear Material," provides guidance in this area.

##### Content

Describe the types of seals that will be used to secure the material's container during transport.

#### 5.4 INSPECTION (73.47(g)(1)(iv))

##### Intent

The intent of this paragraph is to require the shipper to check the integrity of the material container's seals just prior to shipment so that he can be assured that they have not been compromised. Then, upon receipt of the shipment, if the receiver discovers the container's integrity has been compromised and the material is missing, the scope of the recovery operation can focus on the transportation route.

##### Content

Describe the procedures to be used to ensure that the integrity of the containers or seals is checked just prior to shipment.

#### 5.5 IN-TRANSIT PHYSICAL PROTECTION (73.47(g)(1)(v))

##### Intent

The intent of this paragraph is to require that either the shipper or receiver be made responsible for the physical protection of the material while it is in transit and that the responsible person has acknowledged this responsibility by written agreement.

##### Content

In his security plan, the shipper should either acknowledge responsibility for the in-transit physical protection of SNM of low strategic significance or ensure that a written agreement from the receiver has been received in which the receiver accepts either full responsibility or shared responsibility for the in-transit physical protection of this material in accordance with paragraph 73.47(g)(3) of 10 CFR Part 73.

## CHAPTER 6 RECEIVER REQUIREMENTS

This chapter provides guidance on meeting the requirements of paragraph 73.47(g)(2), which are as follows:

- (g)(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 paragraph 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.

### 6.1 INSPECTION (73.47(g)(2)(i))

#### Intent

This requirement is intended to determine whether the material's container has been compromised enroute and whether any material has been removed so that immediate recovery procedures can be initiated if required.

#### Content

Describe the procedures to be used to ensure that the integrity of the containers and seals will be checked upon receipt of the material shipment.

### 6.2 NOTIFICATION (73.47(g)(2)(ii))

This requirement is intended to:

1. Ensure that knowledge of the current location of all SNM is available, and
2. Formally inform the shipper that the material has been received.

#### Content

Ensure that a completed copy of Form NRC-741, "Nuclear Material Transaction Report," will be sent to the shipper within 10 days after a material shipment has been received as required in § 70.54 of 10 CFR Part 70.

#### 6.3 IN-TRANSIT PHYSICAL PROTECTION (73.47(g)(2)(iii))

#### Intent

The intent of this paragraph is to require that either the receiver or shipper licensee be made responsible for the physical protection of the material while it is in transit and that the responsible licensee has acknowledged this responsibility by written agreement.

#### Content

In his security plan, the receiver should either acknowledge responsibility for the in-transit physical protection of SNM of low strategic significance or ensure that a written agreement from the shipper has been received in which the shipper accepts either full responsibility or shared responsibility for the in-transit physical protection of this material in accordance with paragraph 73.47(g)(3) of 10 CFR Part 73.

### CHAPTER 7 IN-TRANSIT PHYSICAL PROTECTION REQUIREMENTS

This chapter provides guidance on meeting the requirements of paragraph 73.47(g)(3), which are as follows:

- (g)(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.

#### 7.1 RESPONSE PROCEDURE (73.47(g)(3)(i))

##### Intent

The intent of this regulation is to help the licensee identify those transportation incidents that could affect the security of the SNM in transit for which he might expect to be notified and for which response procedures should be planned.

##### Content

Identify those events for which response procedures will be developed. Also describe the type of response to be accomplished for each event identified and the duties and responsibilities of the security organization and management involved



in the response. Ensure that the NRC will be notified immediately in the event of theft or attempted theft of the material.

## 7.2 NOTIFICATION (73.47(g)(3)(ii))

### Intent

The intent of this requirement is to ensure that the licensee responsible for the physical protection of SNM in transit will have a firm basis for deciding whether or not to initiate response procedures in the event a shipment becomes overdue or is lost.

### Content

Describe the arrangements and procedures that will be used for notifying the licensee who arranges for the physical protection of material in transit (1) of the arrival of the shipment at its destination or (2) of any such shipment that is lost or unaccounted for after the estimated time of arrival at its destination.

## 7.3 LOST MATERIAL NOTIFICATION (73.47 (g)(3)(iii))

The intent of this requirement is to ensure that, in the event a shipment becomes overdue and no reasonable explanation has been received from the carrier regarding its status, a trace investigation will be conducted to locate the missing SNM. At this time, the NRC should be notified that the material is missing and informed as to what steps are being taken to recover it. Although the licensee is responsible for notifying the NRC of any missing material and for initiating and assisting in the subsequent investigation, the law enforcement agencies bear the responsibility for physically recovering the material.

### Content

Describe what procedures will be used to trace any shipment that is lost or has not arrived by the estimated arrival time. Ensure that all lost or missing



material will be immediately reported to the appropriate NRC Regional Office along with what actions are being taken to trace the shipment, that the NRC will be notified as specified in § 73.71, and that the shipper or receiver, as appropriate, will also be notified.

## CHAPTER 8 EXPORT REQUIREMENTS

This chapter provides guidance on meeting the requirements of paragraph 73.47(g)(4), which reads as follows:

- (g)(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).

Use Chapters 5 and 7 of this Standard Format to describe the security procedures that will be used to protect the material up to the point where the receiver accepts physical protection responsibility for the shipment.

## CHAPTER 9 IMPORT REQUIREMENTS

This chapter provides guidance on meeting the requirements of paragraph 73.47(g)(5), which reads as follows:

- (g)(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.

## 9.1 SECURITY REQUIREMENTS (73.47(g)(5)(i))

Use Chapters 6 and 7 of this Standard Format to describe the security procedures that will be used to protect the material from the first point where the shipment is picked up.

## 9.2 NOTIFICATION (73.47(g)(5)(ii))

### Intent

The intent of this regulation is to ensure that the exporter is notified that the material has arrived safely.

### Content

Describe the procedures to be used for notifying the exporter of the material that the shipment was received.

## VALUE/IMPACT ASSESSMENT

A separate value/impact analysis has not been prepared for this draft regulatory guide. The guide is being developed to provide a standard format and content for the physical protection plans that licensees authorized to possess or transport special nuclear material of moderate strategic significance or 10 kilograms or more of material of low strategic significance will be required to submit by amendments to the Commission's regulations adopted June 21, 1979. A value/impact analysis prepared for the amendments was made available in the Commission's Public Document Room at the time the amendments were published. This analysis is also appropriate to this draft regulatory guide.

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