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OFFICE OF STANDARDS DEVELOPMENT

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Division 5
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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

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

Requests for single copies of issued guides and draft guides (which may be reproduced) or for placement on an automatic distribution list for single copies of future guides and draft guides in specific divisions should be made in writing to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Technical Information and Document Control.

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

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 tnan 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.

611 297

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.

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.

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.

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:

611 309

(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.

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.

611 311

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.

* 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:

(c)(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

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:

611 319

(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.

611 321

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 ackowledged 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

611 322

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.

611 323

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 of 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.

611 326

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 judgements 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

Identiiy 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

611 328

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.

611 329

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.

611 330

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 deac ivated 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 materia; 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.

611 333

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,

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* 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.

611 341

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

611 344

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.

611 346

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.

611 347

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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NUCLEAR REGULATORY COMMISSION
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611 349