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PHYSICAL PROTECTION FOR TRANSIENT SHIPMENTS

A. INTRODUCTION

Section 70.20b of 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," provides for general licensing of any person to possess transient shipments of formula quantities of strategic special nuclear material (SSNM).* A transient shipment is a shipment of nuclear material originating and terminating in foreign countries on a vessel or aircraft that stops at a United States port. Persons carrying transient shipments are required under the general license to provide physical protection, including the use of armed guards, for transient shipments while the shipment remains in a U.S. port. The physical protection system provided must be in accordance with or equivalent to that required for U.S. domestic shipments of formula quantities of SSNM under the applicable provisions of paragraphs 73.20(a) and (b) and § 73.25 of 10 CFR Part 73, "Physical Protection of Plants and Materials."

A general licensee for a transient shipment (e.g., a carrier) is not required to submit applications or security plans for prior approval by the Nuclear Regulatory Commission (NRC) as are licensees for domestic shipments of formula quantities of SSNM. However, the licensee is required to prepare such plans and to implement them during stops at U.S. ports.

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

This guide describes measures acceptable to the NRC staff that can be taken by the licensee to provide the physical protection for scheduled and unscheduled transient shipments required by 10 CFR Part 70.

B. DISCUSSION

1. BACKGROUND

General licensees under § 70.20b of 10 CFR Part 70 are required to provide physical protection for transient shipments of formula quantities of SSNM in accordance with or equivalent to the physical protection requirements for similar types and quantities of material in domestic shipments. These requirements are stated in 10 CFR Part 73 in terms of general performance objective and requirements [paragraphs 73.20(a) and (b)] and performance capabilities [§ 73.25].

The general performance objective and requirements indicate the level of protection to be provided by the licensee's physical protection system relative to the design basis threat (defined in § 73.1). The performance capabilities define in a systematic way the capabilities the physical protection system must have in order to meet the general performance requirements. In addition, § 73.26 describes a "reference system" containing brief descriptions of systems, subsystems, and procedures the NRC believes would generally be part of a physical protection system that achieves the objective and meets the requirements of §§ 73.20 and 73.25 for domestic shipments. However, the reference system does not necessarily describe a complete system that would meet all the physical protection requirements for U.S. domestic or transient shipments. Additional or alternative measures may be needed depending on the particular circumstances under which protection is to be provided.

The level of protection to be provided would be equivalent to that afforded formula quantities of SSNM in domestic shipments but may differ in detail depending on the circumstances peculiar to a given transient shipment. That is, the physical protection afforded a transient shipment would have to satisfy the general performance objective and requirements of paragraphs 73.20(a) and (b) and the performance capability requirements of § 73.25 but may be less complex

because (1) the stopover times for transient shipments are short, (2) there is no need to offload the shipment from the transport, and (3) the number of persons, if any, required to have access to the shipment is limited.

2. ALTERNATIVE APPROACHES FOR MEETING REQUIREMENTS

General licensees for transient shipments of formula quantities of strategic special nuclear material may meet the physical protection requirements for such shipments in one of two ways:

1. The licensee may contract for physical protection services from a person (or organization) already authorized by the NRC to protect formula quantities of SSNM in transit, or

2. The licensee may undertake to directly provide the required physical protection in accordance with the provisions of the general performance requirements and performance capabilities of §§ 73.20 and 73.25.

3. PHYSICAL PROTECTION PLAN

A physical protection plan in written form is required to be followed in providing physical protection for the transient shipment. Although this plan does not have to be approved by the NRC in advance of the shipment, it must be provided along with the written notification to the NRC staff required by paragraph 70.20b(d) before the shipment first arrives in a U.S. port.

In the case of unscheduled transient shipments, i.e., those resulting from exigent circumstances or route or schedule changes that require stops at U.S. ports not on the transport's itinerary at the time the SSNM was loaded aboard, the licensee may not have the same opportunity for advance planning as in the case of scheduled shipments. However, the licensee is required to notify the NRC and begin making physical protection arrangements immediately after the decision is made to stop at the U.S. port. Although at the time SSNM is loaded aboard an aircraft or vessel carriers may not intend to stop at a U.S. port, the knowledge (1) that they are carrying SSNM in formula quantity and (2) that their itinerary brings them through or near U.S. territory (i.e.,

territorial waters or air space) should prompt them to do the necessary preplanning and make appropriate prearrangements to meet the NRC's physical protection requirements should a stop at a U.S. port become necessary.

When NRC officials are notified of or discover an impending transient shipment of a formula quantity, they will make preparations to inspect the carrier's physical protection system for the shipment while it is in port to ensure its adequacy or to take emergency measures if the required level of protection is not provided. The authority to make such inspections is provided for in 10 CFR Part 70.

The regulatory position of this guide describes the measures that may be employed in meeting the physical protection requirements for transient shipments. Sections 1 through 7 apply equally to scheduled and unscheduled transient shipments. Section 8 discusses the special considerations applicable to the physical protection requirements for unscheduled transient shipments and notes exceptions and alternative procedures for meeting such requirements. Sections 1 through 7 provide an outline acceptable to the NRC staff for use by the licensee in developing the required physical protection plan, although no specific format is required for such plans.

The bracketed references following each heading in the regulatory position denote the portions of the regulation applicable to the physical protection measures discussed under that heading.

4. PUBLIC DISCLOSURE AND CLASSIFICATION OF PLANS AND NOTICES

The NRC has determined that the details of physical protection plans and programs submitted to the Commission should be withheld from public disclosure by the NRC pursuant to Section 147 of the Atomic Energy Act of 1954, as amended. In addition, certain elements of such plans and programs and of the notices given the NRC in accordance with paragraph 70.20b(d) of 10 CFR Part 70 may be considered classified as Confidential National Security Information (CNSI) pursuant to 10 CFR Part 95 (published in the Federal Register on March 5, 1980, at 45 FR 14483). Any physical protection plans or programs prepared and maintained by carriers operating in the United States or their agents to satisfy the physical protection requirements of the NRC for transient shipments and the notifications given by such persons to the NRC in accordance with paragraph 70.20b(d) are considered classified and should be appropriately marked

and handled accordingly (see § 95.39). However, similar types of information generated by persons outside the United States are not considered to be national security information if such information is not under the control of the United States Government. It is expected that the persons who generate such information will in their self-interest protect it from unauthorized access and public disclosure to the extent practicable. Detailed guidance regarding the elements of plans that are considered classified can be found in Appendix A to 10 CFR Part 95. Part 95 contains information on the proper handling and transmittal of classified information.

The following elements of the information required to be provided the NRC in the notification of a transient shipment are considered classified as CNSI:

1. Location of scheduled stops in U.S. territory.
2. Arrival and departure times for scheduled stops.
3. Details as to the type and quantity of special nuclear material contained in the shipment.
4. The numbers of guards who will protect the shipment.
5. Contingency plans for the response of security forces.

Most of this information is considered declassified when it becomes operational. More details on the conditions under which this information may be declassified may be found in Appendix A to 10 CFR Part 95.

Arrangements can be made on a case-by-case basis to coordinate the protection of safeguards-sensitive information regarding a transient shipment by contacting the Division of Safeguards, Office of Nuclear Material Safety and Safeguards, at the NRC headquarters in Washington, D.C. This contact can be made through the appropriate NRC Inspection and Enforcement Regional Office listed in Appendix A to 10 CFR Part 73.

C. REGULATORY POSITION

1. GENERAL CONSIDERATIONS

1.1 Purpose and Scope

The licensee physical protection plan is required to ensure that the licensee has done sufficient planning to physically protect transient shipments

of formula quantities of strategic special nuclear material according to the requirements of the applicable regulations (i.e., § 70.20b, paragraphs 73.20(a) and (b), and § 73.25 of 10 CFR Parts 70 and 73). The plan should be available to the licensee's personnel for reference purposes when implementation becomes necessary.

A transient shipment is defined in paragraph 70.4(v) as a shipment of nuclear material originating and terminating in foreign countries, on a vessel or aircraft which stops at a U.S. port. The term "U.S. port" is intended to include all ports of entry that carriers would normally use in making such shipments but in unusual circumstances would also include the first landfall in U.S. jurisdiction, U.S. territories included, regardless of the transport mode or location. It is the carrier's responsibility to determine whether the amounts of SSNM being carried constitute a formula quantity, and if so, to provide the physical protection required by paragraph 70.20b(c) and the notification to NRC required by paragraph 70.20b(d).

The general license issued pursuant to § 70.20b for transient shipments of formula quantities of SSNM is effective from the time the shipment enters a U.S. port until the time the shipment exits that port. The planning and notification requirements obviously must be accomplished prior to the time the physical protection requirements of the general license become effective. Specific considerations related to meeting the physical protection requirements for unscheduled transient shipments of formula quantities of SSNM are presented in Section 8.

1.2 Contingency Plans [Paragraphs 73.25(d)(1)(ii) and (iii)]

Safeguards contingency plans for transient shipments are not required to be submitted for approval in advance of shipments as they are for domestic shipments of formula quantities of SSNM. Contingency plans for transient shipments should be an integral part of the physical protection plan provided by the licensee. A typical transient shipment is likely to remain in port for a limited time, from several hours to several days, considerably reducing the complexity of the contingency plans needed to satisfy the requirements of the regulation (compared with plans required for domestic road or multimode shipments that could involve several different local law enforcement jurisdictions and changing environments as the shipments move from one location to another

along the planned routes). Contingency plans for domestic shipments are discussed in detail in Regulatory Guide 5.56, "Standard Format and Content of Safeguards Contingency Plans for Transportation."

Contingency plans for transient shipments are expected to include the following basic features and items of information:

1. Scope - A determination and identification of the types of safeguards-related incidents covered and not covered in the contingency plan. (For example, the plan may be designed to respond to armed attacks by small groups but not to armed insurrections.)

2. Trigger Events - Those events that will be used to signal the beginning or aggravation of a safeguards contingency according to how they are perceived initially by licensee personnel (e.g., discovery of a damaged SSNM container or broken seal, receipt of a written or telephoned threat against the shipment, discovery of attempted sabotage of the shipment).

3. Responses and Objectives - The actions that will be taken by licensee personnel in response to each of the trigger events and the objectives to be accomplished by each of the proposed actions. The persons within licensee management or the licensee security organization who will perform the response actions should also be specified.

4. Law Enforcement Assistance - A listing of the available local law enforcement agencies (LLEA) for the U.S. ports at which the shipment will stop and the methods arranged to communicate with them in the event their assistance is needed.

5. Other Considerations - Such items as constraints imposed upon security organization members (i.e., guards) by local and State laws, company policies and practices, and other factors, especially those relating to the use of deadly force.

1.3 Security Organization Training, Equipment, and Qualification [Paragraphs 73.25(d)(1)(i), (iv), and (v)]

Normally, seven armed personnel should be provided to protect a transient shipment stopped at a U.S. airport, while at least two armed individuals should be provided to protect a transient shipment on a vessel (not offloaded). This is consistent with the provisions of paragraphs 73.26(j)(3) and (l)(4).

Personnel selected to be members of the licensee's security organization entrusted with the physical protection of a transient shipment are required to be appropriately trained and qualified to perform all the tasks to which they are assigned. This includes being qualified and appropriately licensed by the local jurisdiction to use the weapons assigned them and being sufficiently fluent in English to ensure rapid and clear communications with the LLEA for purposes of requesting assistance from and coordinating with the LLEA response forces. Firearms, communications devices, and other equipment must be in good operating condition. To ensure that all security organization personnel and armed response personnel are properly trained and qualified, the licensee may arrange for the employment of such personnel in one of three ways:

1. Use of local law enforcement agency personnel. Such personnel may be presumed to be properly qualified with the weapons assigned to them while on official duty and to have the skills necessary to perform guard duties. LLEA personnel may be used while functioning in their official capacity, or they may be privately employed while off duty, depending on local regulations governing such employment and the willingness of the LLEA to provide temporary guard services.

2. Use of private guards provided by an organization licensed or approved by the NRC to provide physical protection of SSNM (such as for another NRC licensee).

3. Use of private guards who have been trained and qualified by the licensee, its U.S. agent, or other organization and have been determined by the licensee to be prepared to perform the tasks assigned them according to the licensee's written physical protection plan.

Foreign nationals who accompany a transient shipment into port as escorts for physical protection purposes may be considered to make up a portion of the guard force required for protection of the shipment while in the U.S. port. However, several considerations apply particularly in this case to ensure that such personnel are not unduly limited in the extent to which they are able to contribute effectively to the protection of the shipment. It should be ensured that language difficulties and lack of familiarity with local communications systems do not prevent their communicating rapidly and effectively with local law enforcement agencies or with other members of the guard force recruited locally. Efforts should be made to secure weapons permits in advance allowing them to legally carry weapons in the jurisdiction in which the port is located. In most local jurisdictions, these individuals may not legally carry their firearms off the plane or vessel without such permits. Inclusion of foreign nationals under a common command with other guards of local origin may hinder effective command and control of the guard force unless appropriate measures are taken to properly integrate the foreign nationals into the guard force.

Whether foreign nationals are utilized or not, the licensee should be prepared to demonstrate that persons employed to protect the shipment meet training and qualification requirements equivalent to the portions of Appendix B to 10 CFR Part 73 relevant to their assigned duties and that they can function effectively together to satisfy the general performance requirements and performance capabilities of §§ 73.20 and 73.25. Although there is no requirement under the general license to obtain advance approval from the NRC regarding the adequacy of the training and qualifications of guard force members, the licensee should be prepared to demonstrate such adequacy through appropriate documentation upon request by the NRC inspector assigned to the shipment.

1.4 Security Management [Paragraph 73.25(d)(1)(i)]

The plan should indicate the personnel (either by name or by position title) responsible for the physical protection of the transient shipment while the general license is in effect, including the chain of command, if applicable.

1.5 Testing and Maintenance Program [Paragraph 73.20(b)(3)]

Paragraph 73.20(b)(3) requires testing and maintenance of the physical protection system's components and procedures. This requirement covers all activities and devices on which the licensee's physical protection system depends to maintain shipment security. Its purpose is to ensure the continued availability of each component of the physical protection system. Since the physical protection system for transient shipments will normally be personnel oriented, the testing and maintenance activity for such systems will consist mainly of ensuring that procedures are understandable and workable by the personnel involved in implementing them. The licensee should ensure that all equipment, including communications devices and weapons, is in good working order. If equipment and armed personnel are provided the carrier by another organization, the licensee should obtain assurances from that organization that such equipment is in proper operating condition at the time these services are provided and the personnel provided are trained and qualified. The licensee should also make certain from time to time that the arrangements made and the procedures provided for in the plan are current and remain practicable and applicable to the conditions anticipated in future transient shipments.

1.6 Security Records [Paragraph 73.70(g)]

The types of records that must be kept are identified in paragraph 73.70(g). They include the names and addresses of persons authorized access to the SSNM while it is in port, documentation of security tours and inspections of the area containing the SSNM, and any other information obtained relating to the security of the shipment during the period of time the general license is in effect.

1.7 Reports to NRC [§ 73.71]

Section 73.71 requires that the NRC be made aware of any security-related incidents that occur during the period of the general license. The plan may specify procedures for reporting security incidents to the NRC when NRC

inspectors are not present on the scene. When NRC inspectors are present, this requirement is satisfied by communicating such incidents directly to them.

1.8 Redundancy and Diversity [Paragraphs 73.20(b)(2) and 73.25(d)(4)]

The physical protection system is required to be designed with redundant and diverse measures. Redundancy means providing two or more measures that perform the same function. This would prevent failure of the entire system should there be a failure of one or more key system elements. Diversity means providing several types of measures that contribute to the performance of a particular security function. If these measures have a common purpose but different performance characteristics (e.g., sensitivities, failure modes, strengths, weaknesses), the system may be able to continue functioning adequately despite particular adverse operational conditions or an attempt to exploit a particular component's performance characteristics.

Since the physical protection system for a transient shipment is generally expected to be less hardware oriented than that for a U.S. domestic shipment, the means of ensuring redundancy in the system will be less involved. Licensees may focus their efforts at ensuring redundancy and diversity in the system by primarily addressing the communications functions and firearms capabilities. This may be done in several different ways.

Alternative communications capabilities should be provided so that more than one person can contact the LLEA to request assistance, and the communications equipment should be of different types in case one type becomes inoperable as a result of equipment failure, adverse broadcast conditions or jamming, or injury to one of the guards. Also, the means provided for alternative communications should be physically separated so that it would be unlikely that an adversary force would be able to destroy both capabilities for contacting the LLEA in a single attack. A single guard who is isolated from other guards should be equipped with a personal duress alarm that annunciates at a location occupied by other guards.

Guards should have shotguns and rifles available for use, as well as individual handguns, to ensure that they will be able to respond effectively to adversaries attacking from either short or long range.

1.9 Notification [Paragraph 70.20b(d)]

Carriers of transient shipments planning to make scheduled stops at U.S. ports are required to notify the NRC of their plans to do so prior to the arrival of the shipment. The notification should be sent by U.S. Mail to be received by the NRC at least 7 calendar days before the first scheduled stop in the United States. The notifications should be addressed to the Director of the appropriate Nuclear Regulatory Commission Inspection and Enforcement Regional Office listed in Appendix A to Part 73. This same office must be notified by telephone 7 calendar days in advance of the first scheduled stop at a U.S. port to inform the NRC that a shipping notice has been sent by mail and whether any changes have been made in the shipment's U.S. itinerary relative to the information contained in the mailed notification.

The licensee should take steps to ensure the confidentiality of the itinerary information and other information contained in the written notification since such information could be used to assist in planning a theft or diversion attempt. In the case of domestic licensees or others who generate such information under the jurisdiction of the United States Government, the notification may come under the requirements of 10 CFR Part 95, which require that it be handled according to specific procedures designed to protect it as Confidential National Security Information (CNSI).

The notification is required to include the following information:

1. Location of all scheduled stops in U.S. territory.

2. Arrival and departure times for all scheduled stops in U.S. territory.

3. A description of the transport vehicle (ship or aircraft) used for the transient shipment. This would include additional transport vehicles to be used if transshipment (transfer of the SSNM to another transport vehicle) is contemplated. The description should be given in sufficient detail to allow the NRC to unambiguously identify the transport vehicle for purposes of inspection when the shipment arrives in port.

4. A description of the nuclear materials in the shipment (elements, isotopes, enrichments, etc.).

5. The number and types of containers of SSNM.

6. The name and telephone number of the carrier's representative in the U.S. at each location in U.S. territory at which a scheduled stop will be made. If the carrier does not have a regular U.S. representative at a given U.S. port facility, he may name such a representative after making temporary arrangements with the representative for another carrier, or he may indicate that no U.S. representative has been designated.

7. A physical protection plan for implementing the requirements of § 70.20b(c). The plan is required to include the use of armed personnel to protect the shipment during stops made at U.S. ports. This plan may be provided in one of two ways:

a. The plan may be included in full with other information required to be included in the 7-day notification, or

b. The carrier may refer the NRC to a physical security plan already submitted to the NRC by another licensee or by the same licensee for a previous shipment. The licensee may intend to implement this plan directly or arrange for another organization to use the plan to protect the transient shipment. When a previously submitted plan is to be used, the carrier should ensure that the plan is specific to each U.S. port at which a stop is to be made or should submit additional information to indicate how the plan is to be adapted to any other port at which a stop is to be made.

If U.S. Mail service is not directly available to the licensee, the licensee should use other means to ensure that the written notification will be received by the NRC at least 7 days prior to the first scheduled stop of the transient shipment within the United States.

The licensee is also required to place a followup call to the same NRC regional office to confirm that the required notification information has been received in accordance with the 7-day notification requirement.

2. SHIPMENT PLANNING AND CONTROL

2.1 Preplanning of Shipment Itineraries [Paragraph 73.25(b)(1)(i)]

It is recognized that, in the case of transient shipments, physical security objectives may not be the determining factor in the planning of the itinerary of the transport carrying the shipment. Also, the time may often be too short for carriers to make changes to accommodate such objectives and still meet their contractual commitments to other shippers. However, sufficient planning could be done in advance to ensure that all NRC physical protection requirements can be met when a transient shipment is planned.

Carrier's agents at U.S. ports should be informed of the NRC requirements so that they can make the necessary advance generic arrangements for the LLEA and private guard organizations to be available as needed. These arrangements and the plan for physical protection could be used by more than one carrier in case an agent represents numerous carriers.

Physical protection plans should be made as uncomplicated as possible to accommodate the necessity for using guard personnel who may have little familiarity with special procedures for protecting SSNM. This can be done by prohibiting offloading of the SSNM from the transport unless absolutely necessary, arranging to isolate the transport or shipment as much as possible from other transports, vehicles, and personnel (e.g., parking an aircraft at an isolated location on the airfield away from the passenger and freight terminals), and taking steps to facilitate the timely performance of any functions (e.g., repairs) that necessitated the stopover (to minimize the time spent in port).

An important part of the planning process is the arrangement made with the LLEA. Policies of these agencies differ with regard to the degree of involvement to which they are willing to commit themselves in the event of a transient shipment. The extent of potential LLEA involvement should be determined in advance, and the physical protection system designed to ensure that an adequate level of protection is provided. Where standing arrangements are in effect, previous arrangements with the LLEA should be reconfirmed just prior to a planned shipment's arrival to take account of any intervening changes in circumstances at a given port facility.

As part of the preplanning for transient shipments, a diagram of the important features of particular port facilities may be provided in the physical protection plan to facilitate implementation of the plan by the carrier's personnel or others.

3. DETECTION AND DELAY OF UNAUTHORIZED ACCESS OR MATERIALS INTRODUCTION BY STEALTH OR FORCE*

3.1 Establishment of Controlled Access Areas** [Paragraph 73.25(b)(2)]

Paragraph 73.25(b)(2) requires that controlled access areas be established surrounding the SSNM or its transport to isolate the SSNM and decrease the number of persons, materials, equipment, and vehicles allowed to come in contact with the transport or the SSNM.

Controlled access areas must have some means of demarcating the restricted area's boundaries that is clear to both authorized and unauthorized personnel.

There must be some way of controlling access to the area at all times to ensure that unauthorized persons are not admitted. Aircraft and seagoing vessels that enter U.S. port facilities need not be protected while they are in motion if it is determined that the SSNM on board is not accessible to unauthorized personnel during such motion. Thus, in most instances, armed response personnel will be required to protect the SSNM only from the moment the transport comes to rest within the port until it starts on its way out of the port (see Section 8 regarding unscheduled transient shipments). This greatly simplifies the physical protection system for transient shipments that use U.S. ports in comparison with the protection for domestic shipments (i.e., those that originate or terminate within United States territory). The physical protection plan should recognize, however, that the cargo compartment containing the SSNM, or the SSNM itself, should be placed under immediate surveillance

*"Stealth" means methods used to attempt to gain unauthorized access, introduce unauthorized materials or remove SSNM where the fact of such attempt is concealed or an attempt is made to conceal it. "Force" means violent methods used by an adversary to attempt to steal SSNM or sabotage a nuclear facility, or violent methods used by response personnel to protect against such adversary actions.

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

as soon as the transport comes to rest in port to ensure that the SSNM remains inaccessible to unauthorized personnel. Airport ground crews, warehousemen, dockworkers, and other personnel should not be permitted to approach the transport or its cargo compartment unless surveillance is provided in accordance with § 73.25.

The plan should describe the approximate dimensions of the controlled access area that would be established relative to the transport of SSNM and the means that would be used for its demarcation.

It should also indicate how attempts to penetrate the controlled access area without authorization will be detected, assessed, and communicated to ensure a response capable of preventing unauthorized removal of the SSNM. Procedures for accomplishing these tasks should be related to the response functions and communications capabilities described elsewhere in the plan. The plan should also detail the procedures that will be used to establish a controlled access area. Specific suggestions regarding measures to establish a controlled access area may be found in the reference system for U.S. domestic shipments [Paragraphs 73.26(f)(2), (i)(7), (i)(3), (k)(1), and (l)(3)].

3.2 Transport Features to Delay Access [Paragraph 73.25(c)(2)(i)]

The requirement for a transport to have features that delay access to the SSNM will usually be satisfied, for transient shipments, by such physical barriers as locked cargo compartments. To the extent that the transport lacks delay-causing features (for example, during periods when the cargo compartment is opened for loading or unloading other cargo), the physical protection system must provide compensating features (for example, stationing guards at the entrance) to ensure that the general performance requirements of § 73.20 are satisfied.

3.3 Access Detection for Transports [Paragraphs 73.25(c)(2)(ii) and (iii)]

The requirement for a capability to detect attempted penetrations of the transport containing the SSNM was intended to provide SSNM shipments with defense in depth - an added level of protection beyond that provided for by the controlled access area - which becomes especially important when many

personnel must be allowed access into the controlled access area for servicing vehicles, handling other cargo, etc. In the case of a transient shipment, there would generally be very few persons authorized to have access to the SSNM or the cargo compartment in which it is contained. The same guards who administer the controlled access area procedures could be used to keep the SSNM or the transport under surveillance to detect unauthorized attempts to gain access provided these two requirements did not impose conflicting duties on a guard (e.g., having to focus attention on two different areas at the same time).

Physical protection requirements for shipments of formula quantities of SSNM other than transient shipments include requirements for the emplacement and periodic inspection of tamper-indicating devices on transports and cargo containers. For transient shipments, carriers are not responsible for the emplacement of seals or other devices but are responsible for ensuring that the seals or other tamper-indicating devices put in place by the shipper continue to function during the period the general license is in effect. Seals are not specifically required by the NRC in the case of transient shipments but they may be employed by the shipper in accordance with requirements of the International Atomic Energy Agency (IAEA) for shipments subject to IAEA safeguards. Paragraph 73.70(g) requires appropriate records to be kept of seal inspections during the time the transient shipment is in port.

4. DETECTION OF UNAUTHORIZED ACCESS OR MATERIALS INTRODUCTON BY DECEIT*

4.1 Access Authorizations [Paragraphs 73.25(b)(3)(i) and (c)(1)(i)]

Access authorizations are required to determine the time and conditions of access for persons who are authorized to be admitted to a controlled access area or for introduction of materials, vehicles, or equipment into such areas. Access authorizations are also required for entry into the transport. In the case of a transient shipment, there are expected to be few authorizations necessary.

*"Deceit" means methods used to attempt to gain unauthorized access, introduce unauthorized materials, or remove SSNM, where the attempt involves falsification to present the appearance of authorized access.

The number of individuals authorized access to the SSNM should be miminized. By limiting the number of authorized persons, the authorization subsystem may be kept relatively unsophisticated yet effective.

Access authorizations would normally be provided in written form, naming the individual to be granted access or the item to be introduced. It would also detail the criteria for entry (e.g., time, place, circumstances) and specify the reasons for which access is granted (e.g., to perform service on the transport, to load or unload other cargo). Written authorizations may be obviated by implementing an escort procedure. Under this procedure, all persons requiring temporary access would be escorted by an armed guard during such access to ensure that only authorized activities are being performed. Section 73.70 requires that written records be kept to document each occasion on which temporary access is permitted.

The physical protection plan may detail the procedures to be used by guards to determine which persons or materials are authorized access to (1) a controlled access area or (2) the transport or the SSNM.

4.2 Access Control at Entry Control Points [Paragraphs 73.25(b)(3)(ii) and (c)(1)(ii)]

Access control procedures are required to be implemented to ensure that only authorized individuals are admitted to controlled access areas or given access to the transport or the SSNM. These procedures involve three distinct subfunctions: (1) identification, (2) verification of identification, and (3) assessment against authorizations. Where few persons or materials are expected to be allowed access, as in the case of most transient shipments, these subfunctions can be performed quite simply without resort to some of the more sophisticated access control hardware and procedures used at fixed-site facilities or for domestic road shipments.

The main problem arising in providing physical protection for a transient shipment will be to allow positive identification of the LLEA or other guard personnel who are actively involved in the implementation of the carrier's physical protection plan. The carrier's agent may also have to be positively identified. The plan should detail the means that will be used to identify these persons before the carrier permits them access to the transport or the SSNM. The carrier should be capable of immediately communicating to the LLEA

information concerning persons presenting themselves as contract guards, LLEA personnel, or other members of the security organization who are discovered to be impostors.

Once the composition of the security organization is confirmed, these persons will assume the responsibility for further implementation of the physical protection system according to the licensee's physical protection plan.

The means used to positively identify the members of the security organization who are to meet the shipment at the time it arrives in a U.S. port must be designed to limit the opportunity for successful use of false credentials or other deceitful actions. This would apply equally to other persons who may be authorized access to controlled access areas or to the SSNM.

5. PREVENTION OF UNAUTHORIZED REMOVAL OF SSNM FROM TRANSPORTS BY DECEIT

5.1 Authorization for Removal of SSNM from Transports [Paragraph 73.25(c)(3)(i)]

Authorizations for removal of SSNM from a transport would follow the same pattern established for access authorizations. For transient shipments, removal of SSNM while in U.S. ports will normally not be necessary. However, if unscheduled removal of the SSNM from the transport becomes necessary as a result of some unusual circumstance, removal authorizations would be determined on a contingent basis. The removal would be carried out under the direction of the carrier (or the person designated to assume responsibility for shipment) according to procedures detailed in the contingency plan. Removal procedures should be designed to ensure that no imminent or apparent threat exists to the safety of the shipment before the SSNM is removed to a more vulnerable situation outside the transport. Additional guidance regarding acceptable procedures for removal of SSNM from the transport may be obtained from Regulatory Guide 5.57, "Shipping and Receiving Control of Special Nuclear Material."

5.2 SSNM Removal Controls [Paragraphs 73.25(c)(3)(ii) and (iii)]

Removal controls are procedures followed in removing SSNM from the transport in which it has been contained. They are required both for routine (planned)

and emergency situations and may include such activities as verification of the identities of persons performing the removal operation and persons to whom custody of the SSNM is to be transferred. The identity of the SSNM being removed and integrity of the containers and any seals are also items to be verified. These procedures act as a filtering process to ensure that the proper conditions exist and appropriate personnel have been positively identified prior to the removal. Response measures to ensure that deceitful attempts at unauthorized removal of SSNM will be detected and communicated to responsible persons are intertwined with removal controls and may be described in the main body of the plan or referred to a more detailed description in the contingency plan.

6. DETECTION OF UNAUTHORIZED REMOVAL OF SSNM FROM TRANSPORTS BY STEALTH OR FORCE

6.1 Transport Features to Delay Removal [Paragraph 73.25(c)(4)(i)]

Transport features to delay unauthorized removal of SSNM from the transport by stealth or force should be considered an integral part of the physical protection system. When such features are designed into the transport, the physical protection system may take credit for the amount of delay provided by them. To the extent that the transport has features that provide for only a slight delay capability, other components of the physical protection system must be strengthened to compensate for the lack of sufficient delay afforded by the transport. The balancing of these delay and other factors (e.g., response time, size of guard force) is a matter of judgment by the licensee and ultimately the NRC inspection staff. The general guidance is that these factors must be balanced in such a way that general performance requirements of § 73.20 can be satisfied.

Some transport features that delay access may also delay removal. Features that were not previously discussed as delaying access should be included in this part of the plan along with descriptions of those aspects of previously described features that help to delay removal as well. These features may include arrangements for securing the SSNM in the transport vehicle (e.g., securing heavy equipment necessary for removal of the SSNM, binding together the individual packages of SSNM so as to make a one-step removal cumbersome, and binding the SSNM containers to the structure of the transport). These features may or may not be

present on board the transport vehicle for a transient shipment. In some cases, these features may be present for safety or other purposes rather than for physical protection purposes. To the extent that the physical protection system depends on such features to delay unauthorized removal, the licensee should describe which of these features are utilized on board the particular transport vehicle used for the subject transient shipment. If such features are not actually employed, the licensee should take action to employ them or take compensatory action to ensure satisfaction of the general performance requirements.

6.2 Detection of SSNM Removal Attempts [Paragraph 73.25(c)(4)(ii)]

Detection of SSNM removal attempts for transient shipments could be performed in most cases by the same personnel assigned to detect unauthorized access to the controlled access area, the transport, or the SSNM. The licensee should be careful to ensure that these duties, when assigned to particular guard personnel, are not in conflict with other duties assigned them.

7. TRANSMISSION OF DETECTION, ASSESSMENT, AND OTHER SECURITY-RELATED INFORMATION

Various requirements for communications capabilities are described in the regulations relating to detection and assessment; requests for assistance from response forces or the LLEA are described earlier in this guide. The communications capabilities described in this part of the plan would support the performance of these other physical protection functions.

7.1 Communications Among Guard Force Personnel [Paragraph 73.25(d)(2)(i)]

A continuous communications capability is required between members of the transient shipment's guard force. This capability is needed for routine purposes as well as for implementation of emergency procedures detailed in the contingency plan. Communications could be conducted using citizens band handheld transceivers or other similar equipment where face-to-face unassisted voice communications are not practical. On board docked oceangoing vessels, the ship's hardwire communications system may be used, especially where metal shielding would not allow the use of transceivers. The communications function

is an extremely important one with regard to the overall effectiveness of the physical protection system, so that its redundancy and diversity needs to be addressed. Transceivers capable of using more than one channel should be utilized to ensure that some form of communications with the LLEA is possible at all times in the event of a safeguards incident. Dividing the guard force into two or more different groups to ensure their survivability in case of a single attack has been suggested as one procedure to ensure that the communications function will be performed. (See Section C.1.8 of this guide.)

7.2 Communications Between Guard Force Commander and Security Control Center [Paragraph 73.25(d)(2)(ii)]

In the case of transient shipments, the requirement expressed in paragraph 73.25(d)(2)(ii) translates to the following: a continuous communications capability should be maintained between the guard force assigned to protect the transient shipment and a remotely located security control center manned by personnel employed by the licensee to monitor the status of the shipment while it is in port. This security control center could be located in the offices of the carrier's U.S. agent or at some other temporary location in the area of the port. The security control center should maintain knowledge of the status of the shipment at all times during the period the general license is in effect. This could be accomplished through an intermediary such as an airport control tower or the harbor master's office during times the transport is in motion within the port.

Communications between the guard force commander and the security control center need not be continuous, but the capability for immediate two-way communications by either the security control center or the guard force should exist while the shipment is in port.

7.3 Liaison with and Notification of Local Law Enforcement Authorities (LLEA) [Paragraphs 73.25(d)(2)(iii) and (d)(3)]

Both the armed guards for the transient shipment and the security control center personnel are required to possess the capability for direct communications with the LLEA to notify them of the need for assistance if necessary.

The need for such communications is underscored by the basic philosophy of the licensee physical protection system. The guard force for the transient shipment need not be designed to defeat potential attackers in an aggressive mode, but only to protect the shipment and guard personnel from attack. Its primary objective should be to delay the adversary from completing any act of theft of SSNM or sabotage until the LLEA forces arrive. The system should be designed to interface closely with LLEA forces whose responsibility it is to enforce local and State laws regarding thefts and other criminal acts. The capability of the guard force to call LLEA forces into action when such assistance is needed is of great significance to the success of the physical protection system and deserves to be protected with an appropriate level of redundancy and diversity. Liaisons with LLEA personnel should be consummated in advance of the shipment or as soon as possible following arrival in port.

8. SPECIAL CONSIDERATIONS FOR UNSCHEDULED TRANSIENT SHIPMENTS

8.1 Purpose and Scope

The purpose of the physical protection system for unscheduled transient shipments does not differ from that for scheduled transient shipments. However, the scope of protection may differ owing to the unpredictability of the circumstances that would require the transport to make an unscheduled stop at a U.S. port facility. There are essentially two differences.

1. The randomness of stops made at U.S. ports would make them difficult for the adversary to predict so that, for a period of time following arrival in port, the shipment would have a degree of protection arising solely from the randomness of the event. As the time in port grows longer, the ability of the adversary to assemble or regroup his forces and transport them to the port from another location increases also. This will affect the timing of implementation of the physical protection system for the transient shipment.

2. Since the unpredictable factors of weather, equipment failures, or other unusual circumstances may result in the shipment arriving at a U.S. port

at which the carrier neither has made previous arrangements for physical protection nor has a U.S. agent or representative, the physical protection system may have to be implemented by the carrier with little specific knowledge of the port. This will require a much greater dependence on the port's LLEA for cooperation in the early period following arrival in port.

8.2 Notification Requirements [Paragraph 70.20b(e)(1)]

For unscheduled transient shipments, it may be impossible for the licensee to notify the NRC 7 calendar days prior to the arrival of the transport in a U.S. port, as is required for scheduled transient shipments. However, the carrier is required to notify the NRC of its intent to bring a transient shipment of a formula quantity of SSNM into a U.S. port by telephone, radio, or other means immediately upon the carrier's decision to enter a U.S. port. The notification should contain the same types of information included in the 7-day notification required for scheduled transient shipments [as described in paragraph 70.20b(d)] except that some information regarding the name and address of the carrier's U.S.-based representative and the physical protection plan may be unavailable. The carrier may, in fact, not have a U.S.-based representative or agent at the port in question and may have little choice of which port to use, especially if the stop is made because of adverse weather conditions or equipment failure. In such situations, the carrier may choose to name a member of the crew who would assume immediate responsibility for the transient shipment's physical protection and make other arrangements after landing.

8.3 Implementation of Physical Protection Plans for Unscheduled Transient Shipments [Paragraph 70.20b(e)(2)]

Physical protection plans may not need to be implemented immediately upon arrival of a transient shipment at a U.S. port. However, the time that would be allowed to elapse before physical protection plans must be implemented would depend on a number of factors such as the amount of time during which the shipment is expected to remain in port, whether it will be necessary to transfer the SSNM to another transport, or whether there has been any civil unrest (e.g., protest demonstrations) or a recent natural disaster that may appear to pose a threat to the safety of the shipment (e.g., increased risk from mob

actions). Another factor is the extent to which there is public knowledge of the transient shipment entering the port and how much advance knowledge could have been obtained by potential adversaries. Generally, physical protection measures should be implemented within two hours after arrival at the port. NRC inspectors or headquarters personnel would make the final determination based on what is reasonable in the light of local conditions and other circumstances.

In the event physical protection of an unscheduled transient shipment becomes necessary, the licensee will be required to arrange for protection by armed personnel. These may be armed guards provided by a commercial guard service or personnel provided by the LLEA. Whether LLEA personnel will be available will depend on the operating policies of the LLEA at the particular port. If the port has its own security force of armed personnel, it is likely that their services could be obtained, either temporarily until other arrangements can be made, or for the duration of the stop.

8.4 Physical Protection Plans [Paragraphs 70.20b(d)(7) and (e)(1)]

In the event a carrier finds it necessary to bring a transient shipment into a U.S. port with minimal preparation, carriers are required to indicate immediately after the decision to enter a U.S. port the means they will use to ensure the physical protection of the shipment. Plans for providing this physical protection may become available to NRC inspectors in a number of different ways:

1. Carriers may prepare and have on board their own plans in accordance with the regulations and the guidance contained herein. Carriers transporting SSNM of formula quantities with itineraries bringing them within range of U.S. ports might anticipate use of these ports for emergency stops and plan ahead to meet such contingencies.

2. Carriers may have on board or on file with their agents at a U.S. port or ports, physical protection plans prepared by themselves or their U.S. agents that (a) may be adapted specifically to particular ports at which they may make emergency stops or (b) may be generically designed to be adapted to any port as

circumstances require. The latter alternative will leave the carrier with the necessity for making final arrangements for physical protection as the need arises for any given port situation.

3. Carriers who have done no advance planning for physical protection can still comply with the regulation by preparing ad hoc plans while approaching port, if time allows, or shortly after entering the port. They may prepare their own plans in response to the guidance contained in this guide, or they may attempt to obtain the services of a U.S.-based agent who may be more familiar with the NRC physical protection requirements for transient shipments.

NRC inspectors may require the licensee to take certain actions in order to protect the SSNM if they determine that the protection provided by the licensee is inadequate.

VALUE/IMPACT STATEMENT

A separate value/impact analysis has not been prepared for this regulatory guide. The guide was developed to provide guidance to persons subject to physical protection requirements for transient shipments contained in 10 CFR Parts 70 and 73. These requirements were promulgated by amendments to NRC regulations published in the Federal Register on February 13, 1981 (46 FR 12193). A value/impact analysis was prepared for the amendments originally proposed for the physical protection of transient shipments on January 8, 1980 (45 FR 1625), a copy of which was placed in the Public Document Room at that time. This analysis is also appropriate to the final amendments and to this regulatory guide since only minor changes were made in the proposed amendments when the final rule was published.

The major conclusions of the value/impact analysis were that the required physical protection could be provided at reasonable cost and minimal impact to the parties concerned, that the costs of providing such protection are essentially independent of the technical and procedural alternatives considered, and that the overall level of impacts, including those to the NRC, other government organizations, industry, workers, and the public, and also the impact on international relations, will be minimal because of the small number of potential licensees.

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