



# REGULATORY GUIDE

OFFICE OF NUCLEAR REGULATORY RESEARCH

## REGULATORY GUIDE 5.52

(Proposed Revision 3 was issued as DG-5004)

### STANDARD FORMAT AND CONTENT OF A LICENSEE PHYSICAL PROTECTION PLAN FOR STRATEGIC SPECIAL NUCLEAR MATERIAL AT FIXED SITES (OTHER THAN NUCLEAR POWER PLANTS)

#### A. INTRODUCTION

This regulatory guide describes the standard format recommended by the Nuclear Regulatory Commission (NRC) for preparing physical protection plans for formula quantities of strategic special nuclear material (SSNM) at fixed sites other than nuclear power plants. Formula quantities are sometimes referred to as category I quantities of material. Guidance on the content of physical protection plans is also provided in this regulatory guide.

The requirement for a physical protection plan is included in the regulations for physical protection of licensed activities against theft and radiological sabotage of formula quantities of SSNM, which are in 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities"; Part 70, "Domestic Licensing of Special Nuclear Material"; and Part 73, "Physical Protection of Plants and Materials." Specific requirements for licensees possessing formula quantities of SSNM are found in 10 CFR 73.20, 73.45, and 73.46.

Conformance to the format and content of the physical protection plan presented in this guide is not required by the NRC. The physical protection plan may be submitted for NRC review and approval in an alternative format that provides an equal level of com-

pleteness and detail if it addresses every applicable section of 10 CFR Part 73, as does this regulatory guide.

Any information collection activities mentioned in this regulatory guide are contained as requirements in 10 CFR Part 73. The information collection requirements in 10 CFR Part 73 have been approved by the Office of Management and Budget, Approval No. 3150-0002.

#### B. FORMAT OF THE PHYSICAL PROTECTION PLAN

This document is divided into two major parts. The first part describes the physical protection plan format, and the second part outlines the elements of a physical protection program that should be described in the physical protection plan.

If the format in this guide is used, the applicant should follow the numbering system used in Section C, "Physical Protection Plan Contents." Under some circumstances, certain subsections 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 information in support of an application that is not required by the regulations and is not essential to the description of the applicant's physical protection program. This information, which should be relative to the plan, could

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This guide was issued after consideration of comments received from the public. Comments and suggestions for improvements in these guides are encouraged at all times, and guides will be revised, as appropriate, to accommodate comments and to reflect new information or experience.

Written comments may be submitted to the Rules Review and Directives Branch, DFPS, ADM, U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

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include, for example, historical data submitted in demonstration of certain criteria, a discussion of alternatives considered by the applicant, or supplementary data regarding assumed models, data, or calculations. It should be provided in an appendix to the plan.

## STYLE AND COMPOSITION

A table of contents should be included for 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.

Whenever possible, duplication of information should be avoided. Information included in other sections of the application may be covered by specific reference to those sections.

Where numerical values are stated, the number of significant figures should reflect the 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 sections in which 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 papers and inks, numbering of pages, etc.

### Paper Size

*Text pages:* Either the metric standard A4, which is 210 mm by 297 mm, or the customary 8-1/2 x 11 inches.

*Drawings and graphics:* The metric A4 size or 8-1/2 x 11 inches is preferred; however, a larger size is acceptable provided the finished copy, when folded, does not exceed the A4 size or 8-1/2 x 11 inches.

### Paper Stock and Ink

Suitable quality in substance, paper color, and ink density for handling and for reproduction by micro-filming.

## Paper Margins

A margin of no less than 2.5 cm or 1 inch is to be maintained on the top, bottom, and binding side of all pages submitted.

## Printing

*Composition:* text pages should be single-spaced.

*Type face and style:* must be suitable for micro-filming.

*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.

## Binding

Pages should be punched for standard loose-leaf 3-ring binders.

## Page Numbering

Pages should be numbered sequentially throughout the main part of the document. Any appendices may be numbered separately if desired. Each page of the physical protection plan should contain a page number, a revision number if applicable, and a date.

## PROCEDURES FOR UPDATING OR REVISING PAGES

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

The changes or revised portions of each page should be highlighted by a vertical line. The line should be on the margin opposite the binding margin for each line changed or added. All pages submitted to update, revise, or add pages to the report are to 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 in accordance with 10 CFR 50.4(b)(2)(ii) and 10 CFR 70.21.

## PUBLIC DISCLOSURE

The NRC has determined that public disclosure of the details of physical protection programs is not in the public interest, and such details are withheld in accordance with 10 CFR 2.790(d). Thus, the physical protection section of each application should be submitted as a separate enclosure. Other proprietary or classified information, for example, clarifying correspondence between reviewer and licensee, should be clearly identified and submitted in separate enclosures. Each such submittal of proprietary information should request ex-

emption from public disclosure as required in 10 CFR 2.790(b).

## **COMPATIBILITY**

The applicant should ensure that the physical protection plan is compatible with the other sections of the application.

## **SCHEDULE FOR SUBMITTAL**

The applicant should contact the NRC to determine a schedule for the submittal of the physical protection plan.

## **C. PHYSICAL PROTECTION PLAN CONTENTS**

The following sections describe, in general terms, the material and level of detail that should be included within a physical protection plan. The applicant's physical protection plan should follow the organization and numbering system used in this Section C. The applicable sections of the regulations are cited for each section of the physical protection plan. Upon completion of the plan, the applicant should use this regulatory guide as a checklist to ensure that each subject has been addressed.

### **1. INTRODUCTION AND SCHEDULE FOR IMPLEMENTATION**

This section should state the corporate name of the applicant, the facility name, and the location of the facility. The applicant should describe the type of facility to be operated and the general layout of the facility and its surrounding area. This section should include a map of the entire facility and other maps and illustrations as appropriate. The applicant should indicate on these maps the locations of physical protection systems, subsystems, and major components; all material access areas; vital areas; vaults; entry/exit control points; and alarm stations.

This section should also describe the schedule for implementing the physical protection plan, with special attention to those portions involving new construction, significant physical modification of existing structures, or major equipment installation that may require extensions of time. For approved plans, the scheduling of upgrades or new construction should be addressed in this section on a case-by-case basis.

### **2. GENERAL PERFORMANCE OBJECTIVES (10 CFR 73.20(a) and 73.20(b)(1), (2), (3), and (4))**

This section should describe, in general terms, how the physical protection program will have, as its objective, high assurance that activities involving special nuclear material are not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety.

This section should also describe how the performance capabilities outlined in 10 CFR 73.45 will be met through the establishment, maintenance, and arrangement for a physical protection system.

Further, this section should identify those portions of the facility physical protection system for which redundant and diverse components are necessary in order to ensure adequate performance, as required by 10 CFR 73.20(b)(2). In general terms, the applicant should describe the subsystems and components to be used to provide this redundancy and diversity and the ways in which these subsystems and components are redundant and diverse.

Finally, this section should describe how the physical protection system is designed to ensure that the integrity of the system is maintained at all times.

### **3. DESIGN BASIS THREAT (10 CFR 73.1)**

This section should affirm the intent to prevent, with high assurance, the theft of special nuclear material by the threats described in 10 CFR 73.1. The plan should also describe how measures used to protect against theft of special nuclear material also provide protection against radiological sabotage.

### **4. SECURITY ORGANIZATION**

#### **4.1 Establishment of Security Organization (10 CFR 73.46(b)(1))**

This section should state whether the security organization is private or contract. If contract, this section should briefly describe the written agreements between the licensee and contract guard force management that pertain to how the guard force will meet the requirements of Appendix B, "General Criteria for Security Personnel," and Appendix H, "Weapons Qualification Criteria," to 10 CFR Part 73.

#### **4.2 Security Organization Management (10 CFR 73.46(b)(2) and (3))**

This section should describe the structure and management of the security organization, including uniformed security personnel and other persons responsible for security-related functions. This section should contain a description of each supervisory and management position, including responsibilities and how lines of authority extend up to facility and corporate management.

This section should affirm that written security procedures will be used and that provisions for written approval of such procedures and any revision thereto will be developed and used.

This section should also affirm that at least one full-time member of the security organization with the authority to direct the physical protection activities of the security organization will be on site at all times.

#### 4.3 Qualification for Employment in Security (10 CFR 73.46(b)(4) and (5))

This section should affirm that an approved guard force training plan in accordance with Appendices B and H to Part 73 is in effect.

In addition, the plan should describe how the licensee will demonstrate the ability of physical security personnel, whether licensee or contractor employees, to carry out their assigned duties or responsibilities upon the request of an authorized member of the NRC. The plan should also affirm that, within any given period of time (at least 1 work shift or 8 hours), a member of the security organization will not be assigned to or have direct operational control over more than one of the redundant elements of a physical protection subsystem, if such assignment or control could result in the loss of effectiveness of the subsystem.

#### 4.4 Guard Force Training (10 CFR 73.46(b)(4), (7), and (8); II.E of Appendix B to 10 CFR Part 73; and Appendix H to 10 CFR Part 73)

In addition to the affirmation that an approved guard force training plan is in effect (see Section 4.3 above), this section should include a description of the qualification and requalification program for guards and tactical response team (TRT) members in firing with assigned weapons. For TRT members only, include a description of the training program in response tactics.

#### 4.5 Security Force Armament and Equipment (10 CFR 73.45(g)(3) and 73.46(b)(6))

This section should affirm that every guard and tactical response team member will be armed and should describe the armament assigned to members of the security force by position title. In addition, equipment to be used by members of the security force in providing effective response capabilities should also be described.

#### 4.6 Force-on-Force Exercises (10 CFR 73.46(b)(9))

This section should describe how scenarios for force-on-force exercises are developed, the design goals for conducting such exercises, and the frequency of such exercises. This section should affirm that the NRC will receive a 60-day notice of one force-on-force exercise each year so that the NRC may observe the exercise.

#### 4.7 Records (10 CFR 73.46(b)(3)(i), (4), (7), (8), and (9))

This section should affirm that the following records will be maintained and retained and should describe how they will be maintained and retained:

- Current security procedures until the NRC terminates the license for which these procedures were developed; if any portion of these procedures is superseded, the superseded material should be retained for 3 years after the change.
- Results of qualification and requalification for security force members; the documentation should be retained as a record for 3 years after each qualification and requalification.
- Results of weapons qualification and requalification for firing; the results should be retained as a record for 3 years after each qualification and requalification.
- Documentation of completion of training in response tactics by members of the tactical response team; the documentation should be retained as a record for 3 years after the training is completed.
- Results of tactical response team and guard exercises; such records should be retained for 3 years after each exercise is completed.

### 5. PHYSICAL BARRIERS

#### 5.1 General Layout (10 CFR 73.46(c)(1))

This section should describe facility material access areas (and vital areas, if applicable) with regard to their locations and functions and, in general terms, should describe the spatial relationship between required barriers at the protected area and material access areas.

#### 5.2 Protected Area Barriers (10 CFR 73.45(f)(1)(i), 73.46(c)(1) and (2))

This section should identify the physical barriers (including entry/exit points during both opened and closed conditions) at the protected area boundary. This should include a physical description of the barriers and a discussion of the purpose of each barrier.

#### 5.3 Vehicle Barriers (10 CFR 73.45(f)(1)(i) and 73.46(c)(1))

This section should describe the location and placement of vehicle barriers about the protected area. A physical description of the barrier system should be included, along with information that substantiates that the barrier can adequately counter the design basis vehicle. Vehicle control at entry/exit points should also be described.

#### 5.4 Material Access Area Barriers (10 CFR 73.45(b)(1)(i) and 73.46(c)(5)(iii))

This section should describe the level of physical hardening for the walls, floors, and ceilings of the different types of material access areas at the site, for example, materials used and Underwriter's Laboratory hardening level, if appropriate. The number, location,

and type of entry/exit portals should be described. Methods used to provide hardening of the portals (during opened and closed conditions) should be described. Hardening of ventilation ducts or other openings should also be described.

#### **5.5 Security Posts and Structures (10 CFR 73.46(d)(4)(i))**

This section should describe the location and purpose of all permanent security posts and structures. The physical construction of structures used as security posts should be described.

#### **5.6 Isolation Zones (10 CFR 73.46(c)(3))**

This section should describe the location and size of all isolation zones at the facility. The section should affirm that the zones will be maintained clear of obstacles or structures.

#### **5.7 Illumination (10 CFR 73.46(c)(4))**

This section should describe the lighting system at the facility that ensures necessary illumination for all required monitoring, observation, and assessment activities.

#### **5.8 Storage of Strategic Special Nuclear Material**

##### **5.8.1 Vaults (10 CFR 73.46(c)(5)(i))**

This section should describe the purpose of each vault located within the facility and the wall, floor, and ceiling construction of each vault. The location and type of entry portal to the vault should be described.

##### **5.8.2 Tamper-Indicating Containers (10 CFR 73.46(c)(5)(ii))**

This section should describe the construction and use of tamper-indicating containers in the storage of SSNM other than alloys, fuel elements, or fuel assemblies.

##### **5.8.3 Process Material Access Areas (10 CFR 73.46(c)(5)(iii) and (iv))**

This section should describe the purpose of each process material access area at the site and the protection afforded SSNM (other than alloys, fuel elements, or fuel assemblies) while within these material access areas. Both physical and procedural protective measures should be described.

#### **5.9 Storage of Enriched Uranium Scrap (10 CFR 73.46(c)(6))**

This section should describe the locations used for storage of enriched uranium scrap and the protection (physical and procedural) afforded these locations.

## **6. ACCESS CONTROL SUBSYSTEMS AND PROCEDURES**

### **6.1 Numbered Picture Badge Identification Systems (10 CFR 73.46(d)(1))**

This section should describe the numbered picture badge identification system used at the facility. This description should include a discussion of procedures used for badging individuals with authorized unescorted access to the protected area and for individuals not employed by the licensee but who require frequent and extended access to the protected area. Instructions that badged individuals receive in proper badge procedures should also be described, along with procedures for control of nonbadged emergency response individuals during emergency situations.

### **6.2 Access to Vital Areas, Material Access Areas, and Controlled Access Areas (10 CFR 73.45(b)(2) and 73.46(d)(2))**

This section should describe procedures for determining an individual's need for access to a vital area, material access area, or controlled access area; procedures for the distribution and maintenance of lists of authorized individuals; procedures for ensuring the maintenance of the two-man rule within material access areas; and procedures for ensuring that no activities other than those that require access to strategic special nuclear material or necessary maintenance are permitted within material access areas. This section should also describe methods used to visually identify individuals who have authorized unescorted access to vital areas, material access areas, or controlled access areas. This description should note differences in procedures, if any, between working and nonworking hours (i.e., nights, weekends, and holidays) and normal versus emergency conditions.

### **6.3 Access Controls at the Protected Area**

#### **6.3.1 Personnel (10 CFR 73.45(f)(1) and (2), 73.46(d)(4)(i) and (ii))**

This section should describe how the licensee will control all points of personnel access into the protected area, under both normal and emergency conditions. This description should include the methods used to identify individuals, methods used to verify individuals' authorizations, methods used to verify emergency conditions, and procedures for conducting searches of individuals for firearms, explosives, and incendiary devices. Individuals exempted from any of the aforementioned access controls should be described. The distribution and maintenance of authorization lists should also be described.

**6.3.2 Hand-Carried Packages (10 CFR 73.45(f)(1) and (2), 73.46(d)(3) and (5))**

This section should affirm that the licensee will establish and follow written procedures that will permit access-control personnel to identify materials in hand-carried packages that are not authorized entry to the protected area, during both normal and emergency conditions. Further, this section should describe procedures for searching hand-carried packages at personnel and vehicle access points for firearms, explosives, and incendiary devices. The development, distribution, and maintenance of lists of authorized (or unauthorized) materials should be described.

**6.3.3 Delivered Packages (10 CFR 73.45(f)(1) and (2), 73.46(d)(3) and (6))**

This section should affirm that the licensee will establish and follow written procedures that will permit access-control personnel to identify materials in delivered packages that are not authorized entry to the protected area during both normal and emergency conditions. Further, methods used to check for proper identification and authorization should be described along with search procedures for firearms, explosives, and incendiary devices. Any activities exempted from the above procedures should be described. The development, distribution, and maintenance of authorized (or unauthorized) materials lists should be described.

**6.3.4 Vehicles (10 CFR 73.45(f)(1) and (2), 73.46(d)(3), 73.46(d)(4)(i), 73.46(d)(7), and 73.46(d)(8))**

This section should describe procedures used for controlling all points of vehicle access (nonemergency and emergency) into the protected area and should describe how written procedures are established and followed that will permit access-control personnel to identify vehicles that are authorized entry to the protected area. The distribution and maintenance of these procedures should be described. Search procedures of all vehicles requiring entry to the protected area for firearms, explosives, and incendiary devices should also be described. Any vehicles exempted from the aforementioned procedures should be described. Procedures used for escorting vehicles within the protected area and areas where vehicles may have access, along with the purpose for the access, should be described.

**6.3.5 Designated Licensee Vehicle (10 CFR 73.46(d)(8))**

This section should describe the control and use of designated licensee vehicles within the protected area.

**6.4 Access Controls at Vital Areas, Material Access Areas, and Controlled Access Areas**

**6.4.1 Personnel (10 CFR 73.45(b)(2) and 73.46(d)(9))**

This section should describe the methods used by the licensee to control all points of personnel access to material access areas, vital areas, and controlled access areas, including methods used to verify identification and authorization. Personnel exit searches from material access areas should also be described.

**6.4.2 Material (10 CFR 73.45(b)(2) and 73.46(d)(9))**

This section should describe procedures for verifying material entry authorizations and procedures for verifying quantity and type of material. This section should describe the procedures and equipment used to detect unauthorized materials that are hand-carried by authorized individuals or mailed or otherwise shipped as part of an authorized shipment. Describe how conditions differ between regular working hours and non-working hours (i.e., nights, weekends, and holidays).

**6.4.3 Vehicles (10 CFR 73.45(b)(2); 73.46(d)(3) and (9))**

This section should describe methods used to control all points of vehicle access (e.g., under both non-emergency and emergency conditions) to material access areas, vital areas, and controlled access areas, including the establishment and maintenance of written procedures that will permit access control personnel to identify those vehicles that are authorized entry to material access and vital areas. Vehicle exit searches should also be described.

**6.5 Material Access Area Exit Search of Contaminated Waste (10 CFR 73.46(d)(10) and (12))**

This section should describe procedures and areas used for searching contaminated wastes coming from a material access area.

**6.6 Shipment of Strategic Special Nuclear Material Offsite (10 CFR 73.46(d)(11) and (12))**

This section should describe containers and areas, as well as procedures, used for shipping strategic special nuclear material offsite.

**6.7 Escorts and Escorted Individuals (10 CFR 73.46(d)(13))**

This section should identify, by job function, those individuals who may be designated as escorts and describe procedures used for escorting individuals during both routine and emergency situations. Such procedures should describe individuals requiring escort,

badging procedures, training that escorts receive, and recordkeeping.

#### **6.8 Keys, Locks, and Combinations (10 CFR 73.46(d)(14))**

This section should describe licensee procedures for controlling all keys, locks, combinations, and related equipment used to control access to protected, material access, vital, and controlled access areas. The description should include the circumstances under which such keys, locks, etc., are changed and procedures followed when an employee with access to such keys, locks, etc., terminates employment.

#### **6.9 Records (10 CFR 73.46(d)(3), (10), and (13))**

This section should describe recordkeeping procedures for (1) current written procedures that permit access-control personnel to identify vehicles that are authorized and identify materials that are not authorized entry to protected, material access, and vital areas, (2) findings of drum-scanning and tamper-sealing of containers of contaminated wastes coming from material access areas, and (3) the required log of escorted individuals.

### **7. DETECTION, SURVEILLANCE, AND ALARM SUBSYSTEMS**

#### **7.1 Isolation Zone Penetration (10 CFR 73.45(f)(1)(ii) and 73.46(e)(1))**

This section should describe licensee commitments for capabilities to detect penetration through required isolation zones. Generic equipment types, along with associated detection capabilities, should be described.

#### **7.2 Emergency Exits (10 CFR 73.46(e)(2) and (5))**

This section should describe the location of all emergency exits and describe the protection afforded them.

#### **7.3 Material Access Area and Vital Area Protection (10 CFR 73.45(b)(1)(ii) and 73.46(e)(3))**

This section should describe protection afforded (1) unoccupied vital and material access areas, (2) the location of strategic special nuclear material within process material access areas, and (3) vaults and process areas that contain strategic special nuclear material that has not been alloyed or encapsulated, including a description of procedures for access to these particular vaults and process areas. Generic equipment types used to provide this protection, along with associated detection capabilities, should be described.

#### **7.4 Duress Alarms (10 CFR 73.46(e)(4))**

This section should describe the security stations and individuals that are provided with duress alarms. The type of duress alarms used should be described.

#### **7.5 Central and Secondary Alarm Stations (10 CFR 73.45(g)(5) and 73.46(e)(5))**

This section should describe the location and construction of the central and secondary alarm stations. Methods used for annunciation of required alarms should be described, along with protection afforded the stations, both procedural and physical, so that a single act cannot remove the capability of calling for assistance or responding to an alarm. The licensee should affirm that the central alarm station will not contain any operational activities that would interfere with the execution of alarm response functions.

#### **7.6 Power Sources (10 CFR 73.46(e)(6))**

This section should describe types of security equipment, including alarms, capable of being operated from independent power sources, the duration of operation in the event of loss of normal power, and the indications given upon loss of normal power and switchover to standby power. This section should also affirm that switchover to standby power will be automatic and will not cause false alarms.

#### **7.7 Component Supervision (10 CFR 73.46(e)(7))**

This section should describe the physical protection afforded to alarm systems, including transmission media, to ensure that the system is not being tampered with, compromised, or on standby power without the knowledge of the licensee. This section should describe the annunciation systems at the alarm stations and commit the licensee to indicate the status of all alarms and alarm zones in the alarm stations.

#### **7.8 External Protected Area Monitoring and Assessment (10 CFR 73.45(c) and 73.46(e)(8))**

This section should describe methods used to monitor all exterior areas within the protected area and the duration or periodicity of such monitoring. Criteria used in defining authorized and unauthorized activities and conditions within the protected area should be described, along with methods for developing, maintaining, and distributing lists of authorized activities and conditions.

#### **7.9 Observation Methods within Material Access Areas (10 CFR 73.46(e)(9))**

This section should describe methods used to observe individuals within material access areas to ensure that strategic special nuclear material is not moved to unauthorized locations or moved in an unauthorized

manner. The duration or periodicity of such monitoring should be described along with criteria used in defining authorized and unauthorized activities and conditions within the material access area. Methods for developing, maintaining, and distributing lists of authorized activities and conditions should be described.

## **8. COMMUNICATIONS SUBSYSTEMS**

### **8.1 Security Force Communications (10 CFR 73.45(g)(4) and 73.46(f)(1))**

This section should describe how each guard, watchman, or armed response individual on duty will be capable of maintaining continuous communications with the individual in each continuously manned alarm station. This section should also describe how the individual in each continuously manned alarm station will be capable of calling for assistance from other guards, watchmen, and armed response personnel and from law enforcement authorities.

### **8.2 Alarm Station Communications (10 CFR 73.46(f)(2))**

This section should describe the redundant systems used to ensure the capability of communications with the local law enforcement authority.

### **8.3 Power Sources (10 CFR 73.46(f)(3))**

This section should describe methods used by the licensee to keep nonportable communications equipment controlled by the licensee operable in the event of loss of normal power.

## **9. TEST AND MAINTENANCE PROGRAMS**

### **9.1 Installation and Construction Tests (10 CFR 73.46(g)(1))**

This section should describe the testing and inspection program for (1) intrusion alarms, (2) emergency exit alarms, (3) communications equipment, (4) physical barriers, and (5) other physical-protection-related devices and equipment, used pursuant to 10 CFR 73.46, during the installation and construction of the physical protection subsystems and components. This description should also include the purpose for and the intended level of the testing and inspection program.

### **9.2 Pre-Operational Tests (10 CFR 73.46(g)(2))**

This section should describe the testing and inspection program for (1) intrusion alarms, (2) emergency exit alarms, (3) communications equipment, (4) physical barriers, and (5) other physical-protection-related devices and equipment, used pursuant to 10 CFR 73.46, within the pre-operational time frame (af-

ter initial installation, but before full-time operation). This description should include the purpose for and the intended level of the testing and inspection program.

### **9.3 Operational Tests (10 CFR 73.46(g)(3))**

This section should describe the testing and maintenance program for (1) intrusion alarms, (2) emergency exit alarms, (3) communications equipment, (4) physical barriers, and (5) other physical-protection-related devices and equipment, used pursuant to 10 CFR 73.46, during routine operation. This description should include the purpose for and the intended level of the testing and maintenance program. In addition, specific methods for testing each type of equipment should be included in the description, along with periodicity of testing.

### **9.4 Preventive Maintenance Programs (10 CFR 73.46(g)(4) and (5))**

This section should describe the preventive maintenance program established to ensure that all physical-protection-related subsystems and components are maintained in operable and effective condition. This section should also describe corrective actions or compensatory measures used in the event of component failure within physical protection systems.

### **9.5 Repairs and Maintenance (10 CFR 73.46(g)(5))**

This section should describe procedures used in performing repairs and maintenance of physical protection systems.

### **9.6 Reviews and Audits (10 CFR 73.46(g)(6))**

This section should describe the applicant's review and audit of the security program. This description should include the periodicity of the review and audit, a description of who will conduct the review and audit, items covered by the review and audit, how the review and audit will be documented, to whom the review and audit documentation will be provided for review, and the recordkeeping associated with the review and audit.

## **10. CONTINGENCY RESPONSE PLANS AND PROCEDURES**

### **10.1 Contingency Plan Documentation (10 CFR 73.45(g)(2) and 73.46(h)(1))**

This section should affirm that the licensee will have an approved safeguards contingency plan for dealing with threats, thefts, and radiological sabotage related to the strategic special nuclear material and nuclear facilities subject to 10 CFR 73.46. These plans should be developed in accordance with the criteria in Appendix C to Part 73 and should cover, but not nec-

essarily be limited to, the response requirements of 10 CFR 73.46(h)(2) through (h)(5).

#### **10.2 Local Law Enforcement Agency Liaison (10 CFR 73.46(h)(2))**

This section should describe the documented response arrangements that the applicant has made with local law enforcement agencies. It should also include estimated response times.

#### **10.3 Tactical Response Force (10 CFR 73.46(h)(3))**

This section should describe the number of tactical response team members immediately available for response and the duties they will be assigned. In addition, the required force of guards or armed responders available to assist the tactical response team should be described, along with a discussion of the rationale for determining the number of individuals in this force of guards or armed responders and the availability of this force.

#### **10.4 Response Procedures (10 CFR 73.45(g)(1) and 73.46(h)(4))**

This section should describe the applicant's response procedures for dealing with detection of abnormal presence or activity of persons or vehicles within an isolation zone, a protected area, a material access area, or a vital area or evidence or indication of intrusion into a protected area, a material access area, or a vital area. Methods for assessing the threat and neutralizing the threat should be described.

#### **10.5 Use of Force (10 CFR 73.46(h)(5))**

This section should describe the instructions that guards and armed responders will receive in the use of force in the prevention or impeding of theft of strategic special nuclear material.

#### **10.6 Protected Area Alarm Assessment (10 CFR 73.46(h)(6))**

This section should describe methods used for providing assessment of all protected area alarms.

#### **10.7 Unoccupied Vault and Material Access Area Alarm Assessment (10 CFR 73.46(h)(7))**

This section should describe methods used for assessing alarms occurring within unoccupied vaults and unoccupied material access areas containing unalloyed or unencapsulated strategic special nuclear material.

#### **10.8 Unoccupied Material Access Area (Alloyed/Encapsulated Strategic Special Nuclear Material) Alarm Assessment (10 CFR 73.46(h)(8))**

This section should describe methods used for assessing alarms occurring within unoccupied material access areas that contain only alloyed or encapsulated strategic special nuclear material.

#### **10.9 Records (10 CFR 73.46(h)(1) and (2))**

This section should describe how the licensee will establish, maintain, and retain as a record the current safeguards contingency plan. Until the Commission terminates the license, if any portion of the plan is superseded, the licensee should retain the superseded portion for 3 years after the date of the change. This section should also describe the licensee's records of agreements with local law enforcement agencies.

### **11. AUTHORIZED PLACEMENT AND MOVEMENT OF STRATEGIC SPECIAL NUCLEAR MATERIAL WITHIN MATERIAL ACCESS AREAS**

#### **11.1 General (10 CFR 73.45(d))**

This section should describe the purpose and objective of the measures used to control movement and placement of strategic special nuclear material.

#### **11.2 Establishment of Authorized Placement and Movement of Strategic Special Nuclear Material (10 CFR 73.45(d)(1)(i) and (iii))**

This section should describe the criteria to be used to delineate the authorized placement and movement of strategic special nuclear material within each material access area. For each material access area, the locations within the material access area for which the placement and movement of the strategic special nuclear material are to be authorized should be provided. The development, maintenance, and distribution of schedules of authorized placement and movement of strategic special nuclear material should also be described.

#### **11.3 Establishment of Current Knowledge of Strategic Special Nuclear Material (10 CFR 73.45(d)(1)(i) and (ii))**

This section should describe, for each material access area, the components to be used to verify the type, quantity, and location of strategic special nuclear material within the material access area. Procedures and frequency of activities used to monitor or verify the location of strategic special nuclear material should be described.

#### **11.4 Prevention of Unauthorized Placement and Movement of Strategic Special Nuclear Material (10 CFR 73.45(c) and 73.45(d)(1)(iv))**

This section should describe the measures to be used to detect the unauthorized placement and move-

ment of strategic special nuclear material within each material access area. Also, the containment of strategic special nuclear material, when the material is between the vault and process machinery, should be described.

## **12. REMOVAL OF STRATEGIC SPECIAL NUCLEAR MATERIAL THROUGH MATERIAL ACCESS AREA PORTALS**

### **12.1 Development of Authorization Procedures for Removal (10 CFR 73.45(e)(2)(i) and (ii))**

This section should describe how authorization procedures for removal are developed. It should also describe how lists of authorized personnel are to be developed, distributed, and maintained.

### **12.2 Procedures and Controls for Strategic Special Nuclear Material Removal (Including Scrap and Waste) (10 CFR 73.45(e)(2))**

This section should describe how the identification and authorization of each person presenting strategic special nuclear material for removal from a material access area are to be verified. The confirmation of verification of authorization, type, and quantity of strategic special nuclear material should also be described.

Further, this section should describe the components to be used to detect unauthorized removal of strategic special nuclear material. The components to be used to deter unauthorized attempts to remove strategic special nuclear material from material access areas should be described. Procedures and controls should be discussed for both normal conditions (e.g., regular working hours and nonworking hours) and emergency conditions. Procedures used to verify that an emergency condition exists should be described.

## **13. COMPENSATORY MEASURES FOR PHYSICAL PROTECTION COMPONENTS (APPENDIX A)**

This section should describe (in generic terms) compensatory measures to be taken in the event of a failed or degraded component of the physical protection system. (This section may be an appendix to the physical protection plan, if desired.)

## **14. SPECIAL SITUATIONS OR CONDITIONS AFFECTING PHYSICAL PROTECTION (APPENDIX B)**

This section should describe long-term, site-specific unique situations not covered by the main body of the physical protection plan (e.g., decommissioning activities). (This section may be an appendix to the physical protection plan, if desired.)

## REGULATORY ANALYSIS

A separate regulatory analysis was not performed for this regulatory guide. The regulatory analysis prepared for amendments to 10 CFR 73.46 in 1988 provides the regulatory basis for this guide and examines the costs and benefits of the rule (as implemented by the guide.) A copy of this regulatory analysis is available for inspection and copying for a fee at the NRC Public Document Room, 2120 L Street NW., Washington DC, as Enclosure E to Secy 88-250.

**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001**

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