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REGULATORY GUIDE

OFFICE OF STANDARDS DEVELOPMENT

REGULATORY GUIDE 5.52

STANDARD FORMAT AND CONTENT FOR THE PHYSICAL PROTECTION SECTION OF A LICENSE APPLICATION (FOR FACILITIES OTHER THAN NUCLEAR POWER PLANTS)

USNRC REGULATORY GUIDES

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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. However, comments on this guide, if received within about two months after its issuance, will be particularly useful in evaluating the need for an early revision.

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INTRODUCTION

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

The principal requirements with respect to the physical protection of licensed activities against industrial sabotage and with respect to the physical protection of special nuclear material in transit are found in Title 10, Code of Federal Regulations, Part 50 (10 CFR Part 50), "Licensing of Production and Utilization Facilities;" Part 70, "Special Nuclear Material;" and Part 73, "Physical Protection of Plants and Materials."

Paragraph 50.34(c) of 10 CFR Part 50 and Paragraphs 70.22(g) and 70.22(h) of 10 CFR Part 70 identify the physical protection information that must be provided in a Physical Security Plan as part of an application in order for the applicant to demonstrate compliance with the specific physical protection requirements of 10 CFR Part 73. A physical protection section must be submitted with each application for a license to possess SNM, except for low enriched uranium plants (less than 20 percent U-235) where no physical protection review is required, or for a license authorizing transport or delivery of SNM.

This document describes the information required in the physical protection section of an application and prescribes a standard format for presenting the information in an orderly arrangement.

The license application that is submitted under 10 CFR 70.21(f) should include a section containing the information requested in Chapters 1 through 3 of this Standard Format. That section should be designated as the Preliminary Physical Security Plan. In particular, design information of the type requested in Chapter 2 is needed early in the licensing process to ensure that plant features needed to meet materials and plant protection requirements are included in the facility design.

The format of Parts I and II of the Physical Security Plan for Fixed Sites applies to applications for a license to possess or use at any site, or at contiguous sites subject to control by the licensee, uranium 235 (contained in uranium enriched to 20 percent or more in the U-235 isotope), uranium 233, or plutonium alone or in any combination in a quantity of 5000 grams or more computed by the formula: grams = (grams contained U-235) + 2.5 (grams U-233 + grams plutonium).

The format of Part III, Physical Security Plan for Special Nuclear Material in Transit, applies to applications for authorization to transport or deliver to a carrier for transport SNM of the type and in the amount specified above.

The Standard Format has been prepared to minimize lost time attributable to incomplete applications and to standardize the licensing review process. The applicant is encouraged to prepare his application in accordance with the Standard Format and to provide information in each section to support the conclusion that he will be able to operate in accordance with the pertinent regulations. Although conformance with the Standard Format is not required, the Standard Format does represent a format acceptable to the NRC staff.

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

Purpose and Applicability

This standard format document has been prepared as an aid to uniformity and completeness in the preparation and review of the physical protection section of license applications. It is applicable to fuel reprocessing plants, fuel manufacturing plants, SNM transportation, or other special nuclear material operations involving the possession and use of uranium 235 (contained in uranium enriched to 20 percent or more in the U-235 isotope), uranium 233, or plutonium alone or in any combination in a quantity of 5000 grams or more computed by the formula: grams = (grams contained U-235) + 2.5 (grams U-233 + grams plutonium). This document is not intended to be used for nuclear power plants.

The information requested in this Standard Format is the minimum needed for a license application. Additional information may be required for completion of the staff review of a particular application. The applicant should include additional information as appropriate. It is also the applicant's responsibility to be aware of new and revised NRC regulations. The information provided should be up-to-date with respect to the state of technology for the physical protection techniques and systems that the applicant proposes to use.

Information and procedures delineated in Regulatory Guides in Division 5, "Materials and Plant Protection," and appropriate to certain sections of the Physical Security Plan may be incorporated by reference.

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

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

Use of the Standard Format

The applicant should follow the numbering system of the Standard Format at least down to the level of subsection (e.g., 2.2.3). 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 his application that is not required by regulations and is not essential to the description of the applicant's physical protection program. Such information could include, for example, historical data submitted in demonstration of certain criteria, discussion of alternatives considered by the applicant, or supplementary data regarding assumed models, data, or calculations. This information should be provided as an appendix to the application.

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

Style and Composition

A table of contents should be included in each submittal.

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

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

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

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

Physical Specifications of Submittals

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

1. Paper Size

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

2. Paper Stock and Ink

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

3. Page Margins

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

4. Printing

   Composition: text pages should be single spaced.
   Type face and style: must be suitable for microfilming.
   Reproduction: may be mechanically or photographically reproduced.
   All pages of the text may be printed on both sides, and images should be printed head to head.

5. Binding

   Pages should be punched for looseleaf ring binding.

6. Page Numbering

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

7. Format References

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

Procedures for Updating or Revising Pages

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

The changed or revised portion of each page should be highlighted by a vertical line. 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 change. The transmittal letter should include an index page listing the pages to be inserted and the pages to be removed. When major changes or additions are made, pages for a revised Table of Contents should be provided.

Number of Copies

The applicant should submit the appropriate number of copies of each required submittal pursuant to 10 CFR Paragraph 50.30(c) and §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 pursuant to Paragraph 2.790(d) of 10 CFR Part 2. Thus, the physical protection section of each application should be submitted as a separate enclosure. Other proprietary and classified information should be clearly identified and submitted in separate enclosures. Each such submission of proprietary information should be accompanied by the applicant's detailed reasons and justifications for requesting exemption from public disclosure, as required in Paragraph 2.790(b) of 10 CFR Part 2.

Compatibility

The applicant should ensure that the Physical Security Plan is compatible with the other sections of his application.

PRELIMINARY PHYSICAL SECURITY PLAN

A physical protection section must be prepared for a license application, pursuant to Paragraph 70.21(f) of 10 CFR Part 70, and must be submitted prior to the beginning of construction. The application submitted prior to construction should describe the preliminary design of the plant or transportation system in enough detail to enable a definitive evaluation by the NRC staff as to whether the facility can be constructed with adequate provisions for physical protection of the special nuclear material and the plant.

For fixed sites, the preliminary plan should contain the information requested in Chapters 1 through 3.

PART I OF THE PHYSICAL SECURITY PLAN FOR FIXED SITES

This part of the Physical Security Plan should describe the basic security layout and organization of the facility (i.e, the vital equipment, vital areas, material access areas, and isolation zones) and should explain in detail how the applicant plans to meet the physical protection requirements in 10 CFR Part 73 for plants and special nuclear materials.

CHAPTER 1 SITE AND FACILITY DESCRIPTIONS

This chapter should describe the site and identify facility strucures and security areas, with emphasis on physical protection features.

1.1 General Layout

Provide scaled drawings showing the site location, the layout of all facility buildings, and the exact location of all doors, ducts, and other openings in buildings and walls used as barriers. Also show the exact location of all parking areas, access roads, fences, outside scrap storage areas, natural terrain, landscaped areas, and the areas owned or exclusively controlled by the applicant. Aerial photographs of the plant and surrounding terrain will be of assistance.

1.1.1 Local Law Enforcement Authorities

Include a diagram (e.g., a county map) showing the location of the facility in relationship to local law enforcement authorities.

1.1.2 Alarm Stations

Include a diagram to identify the locations of the continuously manned alarm stations, and describe the stations.

CHAPTER 2 DESIGN OF STRUCTURES, SYSTEMS, COMPONENTS, AND EQUIPMENT

This chapter of the application should identify, describe, and discuss the principal design features of the structures, systems, components, and equipment important to physical protection.

2.1 Design Information

The design information provided should reflect the most advanced state of design at the time of submission. If certain information identified in the Standard Format is not yet available at the time of submission because the design has not progressed sufficiently at the time of writing, the application should include the bases and criteria being used to develop the required information, the concepts and alternatives under consideration, and the schedule for completing the design and for submitting the missing information.

The application should be modified prior to operation to describe in detail the final design of the plant, as well as the operation procedures significant to the physical protection of SNM. Modification of the design bases, criteria, or features included in the application submitted prior to construction, as well as any new design bases, criteria, or features, should be identified in the application prior to operation. The safeguards significance of each such change should be addressed. The relation of the design bases to the design criteria should be described.

2.2 Design Considerations

In this section briefly discuss the design for the plant structures, systems, components, and equipment important to physical protection. For each criterion, a summary should be provided to show how the principal design features meet each of the criteria in Sections 2.3 and 2.4. Any exceptions to the criteria should be identified, and justification for each exception should be provided. In the discussion of each criterion, refer to sections of the report where more detailed information may be presented.

2.2.1 Design Basis Incident

A "design basis incident" (DBI) is a postulated credible incident and the resulting conditions for which security-related equipment must meet its functional objectives.

2.2.2 Design Bases

Design bases for a physical protection system should identify the function of the system in providing physical protection of special nuclear material or the plant. For example, certain access control stations, physical barriers, and communications systems, etc., will make up the basic means for physical protection.

2.2.3 Design Criteria

Design criteria should define the design, fabrication, construction, testing, and performance characteristics associated with the respective design bases identified above for the principal physical protection system germane to plant protection and special nuclear material protection.

2.2.4 Design Features

Design features should identify characteristics of the physical protection system and its parts that will permit the system to satisfy the design criteria. Specific values or ranges of values of design parameters selected as reference bounds for design should be given. These values may include constraints derived from the state of the technology or generally accepted practices for achieving functional physical protection objectives (such as detection system sensitivity, false alarm rate, and communication equipment capability). Alternatively, these values may include requirements derived from analysis or investigation (e.g., calculations or experiments) of the effects of a design basis incident for which a system, structure, component, or equipment must meet its functional physical protection objectives (e.g., barrier characteristics and lighting). For example, the protective lighting system that provides 0.2 foot candle of illumination may consist of a network of buried cables, photoelectric activators, mounted light sources, etc., having specific features or characteristics.

2.2.5 Design Relationships

The design descriptions in this chapter should show the interrelationships whereby design features are selected to meet the design criteria that have been established to conform to specific design bases for the physical protection system.

2.3 General Criteria

The following general design criteria should be addressed.

2.3.1 Assurance of Quality

Reference the quality assurance program, as described in Chapter 3, used to ensure that structures, systems, components, and equipment important to physical protection against industrial sabotage and theft are designed, fabricated, erected, and tested to perform satisfactorily in service. The requirements for quality assurance programs in Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," may be used for this purpose.

2.3.2 Process, Components, and Material Isolation

Describe the provisions for isolation of vital areas and material access areas that are used to limit the need for access to such areas to only those individuals authorized access for essential purposes (for example, controlled access, automation, or remote handling techniques).

2.3.3 Equipment Design and Placement

Describe the extent to which equipment not identified as process equipment or vital equipment is located in a vital area or in a material access area. When such equipment is located in a vital area or in a material access area, describe limitations on the necessity for access to such equipment.

2.3.4 Inspection and Test Capability

Indicate how equipment and systems used in processing, storing, transferring, or protecting licensed material or in protecting the plant are designed to facilitate inspections to verify licensee compliance with applicable Commission licenses, rules, regulations, and orders.

Describe design provisions for testing intrusion alarms, emergency alarms, communications equipment, physical barriers, and other security-related devices and equipment in accordance with Paragraph 73.50(f) and Paragraph 73.60(d) of 10 CFR Part 73.

2.4 Specific Criteria

The following specific design criteria should be addressed.

2.4.1 Physical Barriers

Describe the design of the double barrier concept, consisting of an outer physical barrier, one or more inner physical barriers, and controlled passage through each. Describe the design of the outer

physical barrier, which should be separated from the inner physical barrier or barriers by an intervening area. Indicate how the intervening area will be monitored or periodically checked to detect the presence of individuals or vehicles between the barriers and approaching either barrier in sufficient time to initiate the necessary guard action or notify the local law enforcement agency or both.

Describe the design for vital areas and material access areas as defined in Paragraphs (h) and (j), respectively, of §73.2. For example, the plant layout should be designed such that functions such as food service and administrative offices that do not require access to such areas are carried on outside the inner barrier(s).

Describe the design features of locks that will permit timely changing of keys and combinations.

2.4.2 Plant Isolation

Identify those design features of the isolation zones on both sides of the outer physical barrier and of the monitoring system that will detect the presence of individuals or vehicles in enough time to initiate the necessary guard action or notify the local law enforcement authority or both. Describe how the parking facilities inside the outer barrier are designed to be limited to those for authorized service vehicles.

2.4.3 Protective Lighting

Verify that the clear areas between the inner and outer barriers and the isolation zone around the outer barriers are designed to be provided with illumination of at least 0.2 foot candles.

2.4.4 Personnel, Package, and Vehicle Control

Identify the design features that provide for control of all points in the outer and inner physical barriers used for personnel, package, or vehicle access (including shipping and receiving areas) so that identity and authority for access can be verified. Describe the design of unmanned exits in a physical barrier such as emergency doors or gates such that they are operable from the inside only. Describe the design of tamper-indicating alarm systems provided for all passage points in each inner physical barrier and all emergency exits in the outer physical barrier.

Describe the design features provided at all access points in the outer barrier to allow entering individuals and packages to be searched

for items that could be used for industrial sabotage. Describe the design of any devices, equipment, or procedures used to detect the presence of items such as firearms, explosives, and incendiary devices.

Describe the design features provided to allow search of packages prior to entry into a material access area.

2.4.5 Shipping and Receiving

Indicate how the design precludes the simultaneous handling, in a single area, of SNM and non-SNM shipments and receipts. This criterion may be met, for example, by providing separate docks for SNM and non-SNM.

2.4.6 Surveillance Capability

Describe the design (e.g., illumination, line-of-sight, etc.) that would permit continual direct or remote observation of any individual in material access areas. Also describe how the material access areas and vital areas are locked and protected by intrusion alarm systems when unoccupied.

2.4.7 Communications

Describe the design features of the two-way radio voice communication system available in addition to conventional telephone service between local law enforcement authorities and the plant. Verify that the systems are designed to terminate at a continuously manned central alarm station within the outer barrier and designed to permit continuous communications between that central alarm station and each guard or watchman on duty at the plant.

2.4.8 Emergency Monitoring Capability

Describe the design that provides for backup systems such as emergency power, redundant hardware, and procedural options so that, in the event of power failure, equipment malfunction, or guard incapacitation, a level of protection consistent with safety requirements can be provided.

2.4.9 Intrusion Alarm System

Describe the alarm system designed to annunciate in a continuously manned central alarm station located within the protected area and in at least one other continuously manned station, not necessarily within the protected area, such that a single act cannot remove the capability

of calling for assistance or otherwise responding to an alarm. Indicate the design for self-checking and tamper-indicating and the design for alarm annunciation at the onsite central alarm station to indicate the type of alarm (intrusion alarm, emergency exit alarm, etc.) and location. Verify that all intrusion alarms, emergency exit alarms, alarm systems, and line supervisory systems are designed to meet at a minimum the performance and reliability levels indicated by GSA Interim Federal Specification W-A-00450B (GSA-FSS).

2.4.10 Storage of SNM

Describe the design features of the facilities that will be used to store special nuclear material not in process.

CHAPTER 3 QUALITY ASSURANCE

To provide assurance that the design, construction, and operation of the physical protection system for a plant are in conformance with applicable regulatory requirements and with the design bases and criteria specified in the license applications, the applicant should establish a Quality Assurance Program (QA Program). In this chapter, the Preliminary Physical Security Plan should include a description of the QA Program to be established and executed for the physical protection system during the design and construction stages.

Prior to operation, the applicant should describe in his final plan the QA Program to be established and executed for the operation of the system. The QA Program should be established at the earliest possible time consistent with the schedule for accomplishing the activity covered. If some portions of the QA Program have not yet been established at the time of the preconstruction submission because the activity will be performed in the future, the description should provide a schedule for implementation. The QA Program should meet the requirements of Appendix B of 10 CFR Part 50 that are applicable and appropriate to a physical protection system.

If a portion of the QA Program to be implemented will conform to a particular quality assurance standard, such as one adopted by the American National Standards Institute, the description may consist of a statement that the particular standard will be followed. Where Regulatory Guides have been issued on acceptable methods of implementing portions of the QA Program, the description should specifically indicate whether the regulatory positions of the Regulatory Guides will be followed.

3.1 Quality Assurance During Design and Construction

3.1.1 Organization

Organization charts for the project should be provided to denote the lines and areas of responsibility, authority, and communication within each of the major organizations involved, including those of the applicant, the architect-engineer, the system supplier, the constructor, and the construction manager (if different from the constructor). In addition, a single overall organization chart should denote how these companies interralate for the specific project.

These charts and attendant discussions should clearly indicate the organizational location, organizational freedom, and authority of the individual or groups assigned the responsibility for checking, auditing,

inspecting, or otherwise verifying that an activity has been correctly performed. The charts and discussions should indicate the degree of the applicant's involvement in verifying the adequacy of the QA programs implemented by the applicant's contractors and suppliers, even in those cases where the applicant has delegated to other organizations the work of establishing and implementing the QA Program, or any part thereof.

3.1.2 Quality Assurance Program

The structures, systems, components, and equipment to be covered by the QA Program should be identified, along with the major organizations participating in the program and the designated functions of these organizations. The written policies, procedures, or instructions that implement the QA Program should be described. If these written policies, procedures, or instructions are not yet effective, a schedule for their implementation should be provided.

3.1.3 Design Control

A description of the design control measures should be provided. Included should be measures to ensure that appropriate quality standards are specified in design documents and that deviations from such standards are controlled; measures for the selection and review of suitability of application of materials, parts, equipment, and processes; measures for the identification and control of design interfaces and for coordination among participating organizations; and measures for verifying or checking adequacy of design, such as by design reviews, alternate or simplified calculational methods, or suitable testing programs. The descriptions should also include measures to ensure that design changes, including field changes, will be subject to design control measures commensurate with those applied to the original design and will be reflected in accurate "as built" drawings and specifications.

3.1.4 Procurement Document Control

A description of the procurement document control measures should be provided. Included should be measures to ensure that applicable regulatory requirements, design bases, and other requirements (such as QA Program requirements) which are necessary to obtain adequate quality are included or referenced in procurement documents.

3.1.5 Instructions, Procedures, and Drawings

Provide a description of the measures to be used to ensure that activities affecting quality will be prescribed by documented instructions, procedures, or drawings and will be accomplished in accordance with these instructions, procedures, or drawings.

3.1.6 Document Control

A description of document control measures should be provided. It should include measures to ensure that documents, including changes, are reviewed for adequacy, approved for release by authorized personnel, and distributed to and used at the location where the prescribed activity is performed.

3.1.7 Control of Purchased Material, Equipment, and Services

Provide a description of the measures for the control of purchased material, equipment, and services. Include measures for source evaluation and selection, for assessment of the adequacy by means of objective evidence of quality furnished by the contractor, for inspection at the contractor source, and for examination of products delivery. The applicant should also describe the measures taken to ensure that documentary evidence that the material and equipment conform to the procurement requirements is available at the plant site before installation or use of such material or equipment.

3.1.8 Identification and Control of Materials, Parts, and Components

Describe the measures to be used for the identification and control of materials, parts, and components to ensure that incorrect or defective items will not be used.

3.1.9 Control of Special Processes

A description of the measures for the control and accomplishment of special processes should be provided. Included should be a listing of the special processes. Include the measures to be used to ensure that such special processes are controlled and accomplished by qualified personnel using qualified procedures. This section refers to special processes used in the construction and installation of components or systems, such as welding, casting, or nondestructive testing.

3.1.10 Inspection

Describe the program for the inspection of activities affecting quality, indicating specifically the items and activities to be covered. Included should be an organizational description of the individuals or groups performing inspections, indicating the independence of the inspection group from the group performing the activity being inspected. Also indicate how the inspection program for the involved organizations is established.

3.1.11 Test Control

Describe the test program used to demonstrate that structures, systems, and components will perform satisfactorily in service. Included should be an outline of the test program, procedures to be developed, means for documenting and evaluating test results of the item tested, and designation of the responsibility for performing the various phases of the program. If a test program is used to verify the adequacy of a specific design feature, a description of the qualification testing of a prototype unit should be included.

3.1.12 Control of Measuring and Test Equipment

Describe the measures used to ensure that tools, gauges, instruments, and other measuring and testing devices are properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits. This section does not refer to devices such as metal detectors, motion sensors, alarms, and communications equipment that make up the protection system, but rather to those devices used to test or calibrate the system devices during installations and preoperational testing.

3.1.13 Handling, Storage, and Shipping

The applicant should describe the measures used to control handling, storage, shipping, cleaning, and preservation of items in accordance with work and inspection instructions to prevent damage or deterioration.

3.1.14 Inspection, Test, and Operating Status

The applicant should describe the measures used to indicate the inspection and test status of items to prevent inadvertent bypassing of such inspections and tests. A description should also be provided of the measures for indicating the operating status of the structures, systems, components, and equipment.

3.1.15 Nonconforming Materials, Parts, or Components

Describe the measures used to prevent the inadvertent use of nonconforming materials, parts, or components. Included should be the means for identification, documentation, segregation, and disposition of nonconforming material and notification to affected organizations.

3.1.16 Corrective Action

The applicant should describe the measures established to ensure that conditions adverse to quality are identified and corrected and that the cause of significant conditions adverse to quality is determined and corrective action is taken to preclude repetition.

3.1.17 Quality Assurance Records

Describe the program for the maintenance of records to furnish evidence of activities affecting quality. Included should be means for identifying the records, the retention requirements for the records (including duration, location, and assigned responsibility), and the means for retrieving the records when needed.

3.1.18 Audits

The applicant should describe the system of audits used to verify compliance with all aspects of the QA Program and to determine its effectiveness. Included should be the means for documenting responsibilities and procedures for auditing, required frequency of audits, audit results, and designating management levels to which audit results are reported.

3.2 Quality Assurance Program for System Operation

The applicant should provide a description of the proposed QA Program activities that will govern the quality of the physical protection system during operation. These activities include operating, maintaining, repairing, and modifying the system after the preoperational phase.

The description of the proposed QA Program should include each of the QA criteria outlined in Section 3.1 above.

CHAPTER 4 SECURITY ORGANIZATION

The information in this chapter should describe the security organization and its relationship to the overall management structure of the applicant. Security responsibilities and the chain of command for decision-making on security matters should be included.

4.1 Management Organization

Describe the management structure for operation of the plant. An organization chart should be provided, together with job descriptions identifying the functions, responsibilities, and authority for each of the positions that involves physical protection. Indicate the organizational position responsible for the shift supervision of the security force.

4.2 Security Organization

Provide an organization chart of the security force and job descriptions for guards and watchmen. Describe the security organization for each shift. Indicate whether the security force is a part of the facility organization or is acquired by contract. If a contract force is used, state the specific functions provided by the contractor. Describe how the applicant will ensure that the contract functions are performed adequately.

4.3 Security Personnel

The information in this section should describe the qualifications (initial and periodic updating schedule), training, and testing of the security force. See Regulatory Guide 5.20, "Training, Equipping, and Qualifying of Guards and Watchmen."

4.3.1 Qualification

State the minimum qualifications for guards and watchmen. Specify age, education, physical condition (including minimum vision and hearing standards), and experience requirements.

4.3.2 Screening

Describe the system for qualifying, selecting, and hiring of guards and watchmen. Provide a copy of a typical employment application. State whether fingerprints are taken. Describe the policies and procedures established to verify an applicant's employment, military, fingerprint,

arrest, and conviction records and to ascertain his character. Indicate whether information is gathered by letter, by telephone, or in person and whether a written report of results is prepared.

State the organizational unit and position titles of persons who evaluate applications and have approval authority. State the approval and rejection criteria. Provide details for NRC security clearance, clearance by another government agency, or bonding for guards or watchmen.

4.3.3 Training Program

Describe the training program for guards and watchmen provided by the applicant or contractor, including training in the use of firearms. State the scope and extent of the program; provide an outline or list of topics covered, together with a brief description of the subject matter and the time allotted for each topic.

State in general terms the scope, extent, and frequency of planned refresher or retraining courses.

4.3.4 Tests and Records

Describe the program for qualification and annual requalification of security personnel to demonstrate that they have an understanding of security operating procedures and the ability to perform assigned duties. Include the content of the program, by topic and extent of time spent on each topic. Describe the system for documentation of qualification and annual requalification. Furnish a copy of a typical test or list of questions that will be used to determine the qualifications of a candidate.

4.4 Security Equipment

List the equipment provided the guards and watchmen and give descriptive data or performance characteristics, as appropriate. For example:

1. Weapons (number, kind, and caliber of firearms; supply of tear gas or aerosol irritant projector (e.g., Mace*));
2. Portable communications devices (make, kind, and range);
3. Vehicles (radio equipped, spotlights, etc.);
4. Uniforms.

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*Mace is a registered trademark of the General Ordnance Equipment Corporation.

Also describe the status of the equipment, i.e., who has personal custody and where it is stored. State the authority of the security force to use the equipment. In particular, discuss the authority of the security force to carry and use firearms in relation to state and local laws.

4.5 Posts and Patrol

Identify each guard or watchman post and patrol. Describe the duties to be performed by the individual on duty under both normal and threat conditions. State the number of shifts for each post or patrol, for 24 hours per day, 7 days a week coverage. Specify the number and types of individuals (guards or watchmen) assigned to each shift. Provide a layout plan or sketch showing the location of each fixed post. Specify the scope, extent (i.e., the route), and frequency of each routine patrol. Identify the appropriate permits and sidearms to be maintained by guards or watchmen and the authority they will have to protect nuclear plants and materials.

4.6 Drills

Describe security drills that will be conducted to demonstrate the degree of effectiveness of security measures, procedures, personnel, and equipment. State the frequency of drills and describe records and reports made, method of evaluation of results, and procedures for corrective action or changes.

CHAPTER 5 SECURITY AREAS

A description of the security areas should be provided in this chapter, including protected areas, isolation zones, material access areas, and vital areas. Reference may be made to the drawings submitted under Section 1.1.

5.1 Protected Areas

Provide a description and a scaled drawing, properly labeled, showing the perimeter of each protected area, the barriers, the location of buildings within each area, the points of ingress and egress in each perimeter, the isolation zones, and any breaches (such as tunnels, storm and waste sewers, water intake and discharge conduits, culverts, creeks, and canals).

5.1.1 Physical Barriers

5.1.1.1 Fences. Describe the location, type, wire gauge, mesh size, top guard, overall height, and substrata of security fences. State the composition and method of installation of posts and the method used to prevent intruders from entering under fences through soft soil or erosion openings.

5.1.1.2 Walls. Describe the location, design, and installation of security walls that are used as physical barriers. Include the walls' composition, thickness, height, and top guard.

5.1.1.3 Buildings. Describe the construction of each building that forms part of a physical barrier around a protected area. State the height, composition, and thickness of exterior walls, roof, and flooring. State the size and locations of doors, windows, skylights, and other openings in each barrier surface. Describe the design, composition, and installation of security barriers (such as grates and grills) that are provided to protect the barrier openings against intrusion, except points of normal ingress and egress.

5.1.1.4 Other Barriers. Describe the location, design, composition, and installation of other barriers (such as grates, bars, or grills) designed to protect openings (such as storm sewers, culverts, windows, and ducts) in the perimeter of protected areas against intrusion.

5.1.1.5 Points of Ingress and Egress. Describe the design, material, and method of installing equipment such as doors, gates, and emergency exits in the perimeter of the protected area.

5.1.2 Isolation Zones

Furnish a description and provide a scaled drawing of the location and dimensions of the isolation zones around the physical barriers at the perimeter of each protected area. Identify and describe any objects or structures within the isolation zones that could conceal or shield an individual.

Indicate the location and spacing of the lighting fixtures for the isolation zones, and describe the illumination system for such zones. State the type (incandescent, mercury vapor, etc.) and minimum illumination (in foot candles) provided at ground level in each zone and the type and level of illumination at entry points to the protected areas. Describe the wiring arrangement, power source, and power distribution system. Indicate whether the lighting is controlled by electronic or photoelectric activators and whether the wiring is protected by metal sheaths or conduit. Describe emergency power provisions.

5.2 Vital Areas and Material Access Areas

Provide scaled drawings of buildings that contain vital areas and material access areas. Specifically identify vault and vault-type rooms. Show the location of the points of ingress and egress for each of the areas. State the typical amounts, kinds, and forms of special nuclear material in each material access area and identify the process involved. Identify vital equipment and discuss the function of it in each vital area.

5.2.1 Exterior

When an entire building is designated a material access or vital area, state the composition and thickness of all exterior walls and doors. Also state the size, location, and distance above ground of windows and other openings. Indicate the composition and thickness of roof structures and the size and location of doors, hatches, skylights, and other openings in roofs. Except for points of ingress and egress, describe the protection barriers provided for each opening.

5.2.2 Walls, Floors, and Ceilings

For each vital and material access area located within a building, describe the composition and thickness of walls, floors, and ceilings. Identify any openings in the walls, floors, and ceilings other than doors (for example, windows, vents, or ducts) in which the area exceeds 96 square inches. Describe the material and type of installation of barriers such as grates, grills, or bars designed to preclude entry by an intruder.

5.2.3 Points of Ingress and Egress

Describe the material and method of installation of doors, grates, and emergency exits for each vital and material access area. State the type of lock used at each point of ingress and egress, and describe its manipulation-resistant features.

5.2.4 Vaults

For each vault describe the composition and thickness of walls, floors, and ceilings. Identify any openings in walls, floors, and ceilings other than doors. Describe the composition, size, thickness, and special features of each door. Describe the built-in combination lock mechanism in each door.

CHAPTER 6 ACCESS CONTROLS

This chapter should show how the applicant plans to control personnel, vehicles, and packages entering and exiting security areas. Regulatory Guide 5.7, "Control of Personnel Access to Protected Areas, Vital Areas, and Material Access Areas," provides guidance for complying with NRC requirements for the control of personnel access. Regulatory Guide 5.12, "General Use of Locks in the Protection and Control of Facilities and Special Nuclear Materials," provides guidance for complying with NRC requirements for the use of locks. Regulatory Guide 5.14, "Visual Surveillance of Individuals in Material Access Areas," provides guidance for complying with NRC requirements for surveillance of individuals in material access areas.

6.1 Badge System

6.1.1 General Description

Provide a general description of the badge identification system used for the control of personnel such as employees, vendors, servicemen, deliverymen, utility personnel, manufacturers' representatives, repairmen, inspectors (local, state, and federal), and other visitors who are admitted to security areas. Describe identifying information on the badge, including color photograph, security clearance, expiration date, and employee name, identification number, address, and signature.

6.1.2 Types of Badges

Describe the different types of badges used in the security program. Explain the tamper-resistant features of each.

6.1.3 Coding

Explain the system for special numbering (or coding) of badges for access to such areas as protected, material access, or vital areas. State whether the badges are designed to distinguish different classes of individuals and escort requirements and whether they show the period of time for which access is authorized. Also, identify which classes of individuals are permitted to go to what types of areas.

6.1.4 Control System

Provide a description of the system for issuance, accountability, and control of badges.

6.1.5 Utilization

State the requirements for wearing or displaying badges on the person while on site.

6.2 Access Authorization

Identify by organization component and position title the persons authorized to approve access of employees, nonemployees, and vehicles, with and without escort, to protected areas, material access areas, and vital areas.

State the criteria used in authorizing escorted and unescorted individuals and vehicles (with positive identification) to access protected areas, material access areas, and vital areas.

6.3 Access Registration

Describe the system for registering individuals into and out of security areas. Include the type of information required (name, date, times of entry and exit, purpose of visit, persons to be visited, employment affiliation, citizenship, badge number, name of escort, etc.). Indicate differences in requirements for various types of security areas (protected areas, material access areas, and vital areas).

6.4 Personnel Escort

Describe the personnel escort program, including vehicle drivers and the transfer of a visitor from one escort to another. Indicate the types of individuals required to be escorted within the different security areas. State the responsibilities of the escort.

6.5 Personnel Access

6.5.1 Protected Areas

6.5.1.1 Access Points. Identify each personnel access point in the physical barrier for each protected area. Describe the access controls established (such as air lock, double gate, guard post, switch, lock [combination, key, or card key], closed circuit television [CCTV], and alarm). Describe the period of time when specified coverage is provided for each access point (in hours per day and days per week).

6.5.1.2 Personnel Searches. Describe the system to be used for search of persons to detect firearms, explosives, incendiary devices, and other items that could be used for industrial sabotage. Describe the format for random searches for the classes of personnel for whom random searches are authorized. Indicate who conducts the search and how it is coordinated.

Where a metal detector is used, describe design and performance characteristics, the manufacturer, and the manufacturer's location.

State the model specifications and the model's capability for detecting nonferrous metal placed anywhere on the body (in terms of minimum grams, metal type, configuration, and surface area). Give the confidence limit of the device (percent), and give the false (i.e., false negatives and false positives) alarm rates (percent maximum). State where and how the metal detector alarm annunciates. If appropriate, state whether the alarm is interfaced with an exit door lock so that with the alarm triggered, an interlocked exit door cannot be opened from either side without specific action by the security force. Provide a layout plan, drawing, sketch, or schematic diagram showing detector location and interlocked doors, if any.

Where an explosive detector is used, describe its design and performance features, its location, and its capability for detecting dynamite, TNT, and similar nitrogen products (for example, the minimum number of grams it can detect and its dependence on vapor pressure). State the detector's manufacturer, confidence limit (percent), model specifications, and false alarm rates (maximum percent). As in the case of metal detection equipment (above), state where and how the explosive detector alarm annunciates and whether interlocked doors are utilized, and provide a layout.

6.5.1.3 Package Searches. Describe the clearance system, including random searches for entry to the protected area of packages, valises, tool boxes, or similar items for the detection of firearms, explosives, incendiary devices, and other items that could be used for industrial sabotage.

6.5.2 Vital Areas and Material Access Areas

6.5.2.1 Access Points. For each vital area and each material access area, identify each personnel access point and describe the controls established (e.g., guard post, lock [combination, key, or card key], CCTV, or alarm). Describe the period of time when specified coverage is provided for each access point (in hours per day and days per week).

6.5.2.2 Access Controls. Describe the system for identifying individuals for entrance to each material access area, including vaults and vault-type rooms and each vital area.

6.5.2.3 Authorized Individuals. Identify by position titles the individuals authorized to control admittance to material access areas.

6.5.2.4 Surveillance. For material access areas describe the methods to be used on a continuous basis for observing the activities of individuals to ensure that special nuclear material is not diverted. For guidance, see Regulatory Guide 5.14, "Visual Surveillance of Individuals in Material Access Areas."

6.5.2.5 Exit Search. Describe the system for checking for concealed special nuclear material on individuals who are exiting from a material access area into a protected area. Indicate whether physical searches are made or detectors are used. Describe how physical searches are performed. If detectors are used, describe their design and performance characteristics. State their capabilities in terms of detecting gram quantities of Pu, U-233, or U-235 shielded by 3 mm of brass concealed anywhere on an individual, and state applicable confidence limits and false alarm rates.

If metal detectors are used, state the capability of the metal detector to detect nonferrous metal shielding (i.e., the minimum number of grams that it can detect), give the confidence level for detection anywhere on an individual, and state the false alarm rates for the device (percent).

If detectors are used, describe the system to be used to ensure that concealed SNM will be detected. Explain the measures provided to ensure that an individual will remain at a detector for the required counting time. Indicate what provisions are made for the detention of an individual after an alarm annunciation. If a secure access passageway is used, state whether the doors of the passageway are interlocked so that both cannot be simultanously opened and whether the doors are alarmed so that a specific action must be taken by the security force to permit either door to open without triggering the alarm. State the locations where the SNM detector and metal detector alarms annunciate.

6.5.2.6 Package Searches. Describe the system for entry search or examination of packages, valises, tool boxes, or similar items to detect firearms, explosives, incendiary devices, or counterfeit substitute items that could be used for theft or diversion of special nuclear material from a material access area. Confirm that packages and containers are not permitted entry into material access areas unless needed in support of the operation within the material access areas.

Describe the system for exit search or examination of packages, valises, tool boxes, and similar items to detect theft, diversion, or concealment of special nuclear material before such items are cleared to exit a material access area into a protected area.

6.6 Vehicle Access

6.6.1 Vehicle Access Points

Identify each vehicle access point to each protected area, material access area, and vital area. Describe the entry and exit controls established (for example, gate, guard posts, escorts, locks (combination, key, or card key), CCTV, and alarms). Describe the period of time when

specified coverage is provided for each access point (in hours per day and days per week) and the mode of access (such as rail, road, or sea). Describe delivery and shipping activities that involve passage through, as well as standing near, access points and related barriers, protected areas, and isolation zones.

6.6.2 Protected Areas

Describe the system for identification, clearance, escort, and surveillance of vehicles authorized entry to protected areas. Include a description of the registry, tags, cards, or decals used. Confirm that personal vehicles are not permitted in the protected area. Describe the system for clearing vehicles that are to exit the protected area.

6.6.3 Material Access and Vital Areas

Describe the system to be used for escorting vehicles and drivers who are authorized entry to material access and vital areas. Describe the system for searching and releasing vehicles before exit from a material access area.

6.7 Keys, Locks, and Combinations

6.7.1 Types and Kinds of Locks

State each type of lock used for security or plant protection purposes. Describe the design and manipulation-resistant characteristics of each type of combination lock and the design and pick-resistant features of each type of key lock. For each type of combination lock, confirm that it is a three-position dial type. For each type of key lock, confirm that it provides the equivalent to a six-pin lock. Regulatory Guide 5.12, "General Use of Locks in the Protection and Control of Facilities and Special Nuclear Materials," is available for use in preparing this section.

6.7.2 Keys

Describe the system for issuance and control of keys, including card keys. State the position titles of persons authorized to approve the issuance of keys for access to each area, vault, or vault-type room where key locks are utilized, and state the criteria for such approvals.

Include information as to whether the name, type, and keyway code of each key-lock device is maintained; whether the number of keys made, names of persons to whom issued, and key location are recorded; and whether grand master and group master key listings (with number of keys made), names of persons to whom issued, and names of devices each key operates

are maintained. Also indicate whether running inventories of blanks for each keyway code are made; whether locks are rotated; and whether all keys are periodically inventoried and accounted for.

Confirm that locks are changed when a key is lost or when a person who is authorized to have a key is terminated or reassigned to other duties. State whether keys for security locks are permitted to be taken outside the protected area.

6.7.3 Combinations

Describe the system for controlling combinations of locks to minimize the possibility of compromise. State the titles of persons authorized to approve the issuance of lock combinations for access to each area where combination locks are used. Confirm that combinations are changed periodically, whenever there is evidence of compromise and whenever an employee who was authorized to have a combination is terminated or reassigned to other duties.

CHAPTER 7 INTRUSION AND DETECTION DEVICES

This chapter should provide technical and performance information for alarm systems. The purpose of each alarm device should be stated, but specifications need not be repeated in each paragraph when two or more identical alarm devices are used.

7.1 Design and Performance Characteristics

For each of the uses of intrusion and detection alarms and switches listed below (in Sections 7.1.1 through 7.1.13) and for any other alarm utilized for security or plant protection, state the purpose and function and describe the design, performance characteristics, and manufacturer specifications. Confirm that alarms are self-checking and tamper-indicating, have a source of emergency power, have fail-safe features, and are connected to the central alarm stations. Confirm that alarms and the line supervisory system meet the minimum performance and reliability levels indicated by Government Services Administration (GSA) Interim Federal Specification W-A-00450B (GSA-FSS), dated February 16, 1973. Describe the operation during both the secure mode and the access mode. Indicate the capability for recording status of the alarmed system in terms of date, time, system, area affected, and type of alarm signal.

7.1.1 Emergency Exit(s) In the Perimeter of Protected Areas

7.1.2 Emergency Exit(s) In Vital Areas and Material Access Areas

7.1.3 Protected Areas

7.1.4 Vital Areas

7.1.5 Material Access Areas

7.1.6 Vaults

7.1.7 Vault-type Rooms

7.1.8 Metal Detector, If Used, At Entrance to Protected Area

7.1.9 Explosives Detector, If Used, at Entrance to Protected Area

7.1.10 SNM Detector, If Used, At Exit(s) of Material Access Areas

7.1.11 Metal Detector, If Used, At Exit(s) of Material Access Areas

7.1.12 Open Scrap Storage Area

7.1.13 Specify Other Alarms and Switches or Detection Devices

7.2 Isolation Zone Monitoring

Describe how the isolation zone will be monitored to detect the presence of individuals, vehicles, or other objects within the zone so as to allow response by armed members of the security organization to be initiated at the time of penetration of the protected area. Note that an automated electronic or electromechanical monitoring device is needed and that periodic checking by members of the security force is not an acceptable means for satisfying the requirements of Paragraph 73.50(b)(4). Describe the detection system and the related annunciator and indicate how they are used. For each system identify the type, capabilities, limitations, and manufacturer.

7.3 Annunciators

Confirm that each security alarm annunciates in a continuously manned central alarm station located within a protected area and in one other alarm station, not necessarily on site.

7.4 Emergency Power

Describe the location and source of standby, backup, or emergency power provided to maintain all intrusion and detection alarms on a continuous basis during nonnormal situations (i.e., power outage).

CHAPTER 8 CENTRAL ALARM AND COMMUNICATION SYSTEMS

This chapter should describe the central alarm and communication facilities and equipment provided for the security program. NRC regulations require that all alarms annunciate in a continuously manned central alarm station located within a protected area and in at least one other continuously manned station, not necessarily within the protected area. The two-way radio voice communication capability provided between the continuously manned central alarm station in a protected area and local law enforcement authories (LLEAs) also should be described.

8.1 Facilities

Describe the location and facilities provided for the primary (central alarm station within the protected area) and secondary alarm station. Clearly illustrate that the primary alarm station is protected as a vital area and that windows in the primary alarm station are protected by bullet-resistant materials if the attendant is visible from outside the protected area.

8.2 Staffing

Describe the staffing arrangement for manning each central alarm station. Confirm that the two central alarm stations are continuously manned. Identify the category of personnel manning each. Confirm that at least one supervisor of the security organization will be on site at all times.

8.3 Alarm Equipment

Describe the alarm and annunciation equipment operated at each of the alarm stations. State the performance characteristics of the equipment. Confirm that the annunciation of an alarm at the primary central alarm station indicates both the type of alarm (such as intrusion alarm or emergency exit alarm) and the origin of the alarm. Describe emergency power provisions.

8.4 Communication Systems

8.4.1 Telephones

Confirm that conventional telephone service is provided between each central alarm station and the LLEAs and between the central alarm stations.

8.4.2 Local Communications

Describe the communications equipment provided for two-way communication between members of the security force and an individual in

the primary central alarm station. Include provision for a silent, unobtrusive alarm connecting a protected area access guard and the primary and secondary central alarm stations.

8.4.3 Radio Communications

Provide a description of the two-way radio voice communication system established at the primary central alarm station within the protected area for communicating with LLEAs. Confirm that the system will be manned continuously at both that central alarm station and the LLEA terminal.

Describe the source of standby, backup, or emergency power provided to maintain operable communications equipment during nonnormal situations (i.e., power outage).

CHAPTER 9 RESPONSE TO SECURITY CONTINGENCIES

The requirement for licensee physical protection of SNM is continual, as outlined in 10 CFR Part 73. Since there are no exceptions during contingencies, plans for adequate security should be developed by the licensee for all possible events. This chapter should describe the plans established for response to, assessment of, and initiation of follow-up action for certain contingencies, including alarm annunciations, security threats to the facility, and strikes.

9.1 Organization and Procedures

Describe the security organization and the procedures that have been established to respond to security contingencies, including those enumerated in this section. For each of the contingencies outlined below, describe the response to be taken by the security organization after an alarm annunciation, after a threat has been communicated to the facility, or after the occurrence of other contingent events. State the expected response time and the maximum response time. Describe the factors that affect these response times. State the number of security personnel who will respond and the procedures for deployment of security personnel.

Discuss the criteria (including an estimate of intrusion group size, armament, and apparent intent) to be used in assessing the significance of the contingency. Discuss notification procedures for personnel, supervisors, and authorities. Discuss the status of access points during these contingencies.

9.1.1 Security Threats and Alarm Annunciations

The information described above should be provided for the following types of security threats and alarm annunciations:

9.1.1.1 Suspected Intrusion Into a Security Area

9.1.1.2 Apparent Attempted Theft of SNM

9.1.1.3 Apparent Attempted Smuggling of Contraband Into a Security Area

9.1.1.4 Outage of Critical Plant Protection Equipment

9.1.1.5 Multiple Alarm Annunciations

9.1.2 Other Contingencies

The information described in Section 9.1 should also be provided for the following types of contingencies necessitating more extensive mobilization:

9.1.2.1 Bomb Threats

9.1.2.2 Natural Disasters

9.1.2.3 Civil Disturbances (e.g., Riots)

9.1.2.4 Guard Strikes

9.1.2.5 Fire or Explosion

9.1.2.6 Site Evacuation

9.2 Action Response

Provide description of the immediate measures that will be enacted to neutralize a security threat or contend with other contingencies. State the criteria to be used in determining when off-duty guards or watchmen will be summoned to augment the on-duty force and when the LLEA will be contacted. Identify the organization positions that have authority to contact the local enforcement agency and to notify the NRC.

9.2.1 Size and Composition of Forces

State the response capability of the overall security organization (including LLEA personnel). In particular, provide specific information with respect to the number and source of licensee security personnel available for response and the estimated times of arrival.

9.2.2 Arrangements

Describe the arrangements made with the appropriate LLEA and contract guard service labor representation to respond to a local security force strike. Identify other arrangements or agreements in effect or in process to provide necessary assistance during contingencies.

CHAPTER 10 LOCAL LAW ENFORCEMENT AUTHORITIES

The information in this chapter should describe the arrangements that have been made with local authorities for help and assistance with contingencies identified in Chapter 8. The level of assistance and response time expected from local authorities must be established and evaluated to assess the adequacy of the overall physical security plan.

10.1 Size of Force

Provide specific information with respect to the number and caliber of law enforcement personnel available for assistance and the estimated lapse of time for such personnel to reach the facility. State the number of armed individuals in each complement and the time for each complement to arrive if they are to arrive at intervals.

10.2 Kind of Assistance

State the type or kind of assistance that can be provided (such as police power, investigative work, crowd control, or bomb searches) and the kind of equipment available.

10.3 Arrangements

Describe the arrangements that have been made with local, municipal, county, and state law enforcement authorities to provide emergency assistance when requested. State the titles of the individuals (both licensee and LLEA) who made the arrangements. State whether the arrangements provide for written procedures for orientation training in plant protection and radiation safety and for periodic drills. If guards or watchmen are deputized or otherwise authorized by local or state authorities to perform police duties (such as arrest, apprehension, detention, and conduct of investigations), state the source of the authority.

CHAPTER 11 REPORTS TO THE NRC

Plans for the preparation and submission of security reports to the NRC should be discussed in this chapter.

11.1 Incidents

Describe the procedures for reporting to NRC any incident in which an attempt has been made, or is believed to have been made, to commit a theft or unlawful diversion of SNM or to commit an act of industrial sabotage.

11.2 Unusual Occurrences

Describe procedures, if different from Section 11.1, for reporting to the NRC any unusual occurrences (such as civil disturbances, bomb threats, significant vandalism and demonstrations, or strikes) that may or could have an effect on plant security.

11.3 Security Plan Changes

Describe procedures for furnishing to the NRC reports of changes made in the Physical Security Plan.

PART II OF THE PHYSICAL SECURITY PLAN FOR FIXED SITES

This part of the Physical Security Plan should describe the tests, inspections, records, and other means established by the applicant for demonstrating compliance with the physical protection requirements for plants and materials.

CHAPTER 12 TESTS AND INSPECTIONS

This chapter should provide information on the tests and inspections that are conducted to ensure the continuous integrity of barriers and the operability of security equipment.

12.1 Physical Barriers and Access Points

Describe the tests and inspections that are used to ascertain whether all physical barriers and points of access are intact and operable. State the frequency of routine and special tests and inspections.

12.2 Alarms and Annunciators

Provide a description of the program used to test the operability and to verify the functional performance of security alarms, annunciators, sensors, and transmission lines to the two central alarm stations. State the frequency of routine and special tests, including tests following maintenance work.

12.3 Contraband Detectors

Describe the method of calibration and standardization used for each type of metal, explosive, and SNM detector, where applicable. Delineate the standards, test equipment, and procedures employed for calibration and control programs. State the frequency of calibrations and control tests.

12.4 Communications

Describe the type and frequency of tests used to monitor operability on a routine basis. Indicate the type and frequency of tests used to verify the functional performance of all communications equipment.

12.5 Other Security-Related Equipment

Discuss the test and inspection programs used to maintain the operability of other security-related equipment identified in Part I.

12.6 Special Procedures

Describe special temporary procedures designed to ensure continued protection while security equipment is out of service for repair, maintenance, or testing.

CHAPTER 13 SECURITY RECORDS

This chapter should provide information on the records that are maintained to meet the requirements of Paragraph 70.32(d) and §73.70 of 10 CFR Part 70.

13.1 Security Tours, Inspections, and Tests

Describe the system for documenting the results of all routine security tours and inspections, and of all tests and inspections performed on physical barriers, intrusion alarms, communications equipment, and other security-related equipment.

13.2 Maintenance

Identify and characterize the records that are kept of all maintenance performed on physical barriers, intrusion alarms, communications equipment, and other security-related equipment.

13.3 Alarm Annunciations

Describe the records system for documenting all alarm annunciations, including false alarms and alarm checks. Also describe the system for identifying the type of alarm, location, date, and time of each occurrence.

13.4 Security Response

Indicate the records that are kept of response by facility guards and watchmen to each alarm (including false alarms), intrusion, or other security incident.

13.5 Authorized Individuals

Describe the system for maintaining a record of each individual who is designated as an authorized individual. Indicate whether the record will include the name and badge number of each person so designated, the date of the authorization, its expiration date, and the name of the approval authority.

13.6 Access to Vital Equipment and Vital Areas

Describe the system for maintaining a record of each individual who is authorized to have access to vital equipment and vital areas, with the record showing the individual's name, address, and badge number; the date of the authorization; its expiration date; and the name of the approval authority.

13.7 Access to SNM and Material Access Areas

Describe the system for maintaining a record of each individual who is authorized to have access to SNM and material access areas, with the record showing the individual's name, address, badge number, the date of the authorization, its expiration date, and the name of the approval authority.

13.8 Nonemployee Access

Describe the system for maintaining a record (register) of each visitor, vendor, or other individual who is not an employee of the applicant, with the record showing the individual's name; the date, time, and purpose of the visit; the individual's employment affiliation and citizenship; the name and badge number of the escort; the name of the individual to be visited; and the name of the person who authorized or approved the visit. Describe the system for maintaining a list of designated escorts.

13.9 Employees

Describe the system for maintaining a record of each employee who is issued a permanent badge for access to security areas, with the record showing the individual's name, his badge number, the areas to which access is authorized, the date of the authorization, its expiration date, and the name of the approval authority.

13.10 Changes in Security Plan Not Approved by the NRC

Describe the system to record and maintain records of changes that are made to the security plan without prior approval of the NRC, the date the changes are made, and the name, organizational unit, and position title of the person(s) who approved or authorized the changes. Other changes in the security plan will be made pursuant to Paragraph 50.54(p) of 10 CFR Part 50.

CHAPTER 14 SECURITY AUDITS

The purpose of this chapter is to provide a description of the audit programs established to review periodically the applicability and adequacy of the existing security plan and to assess the degree of compliance of the current performance with existing security requirements.

14.1 Program Audit

Describe the scope, extent, and frequency of planned periodic management audits to review the physical security program of the facility for continued adequacy and effectiveness. Identify by organizational title the persons assigned responsibility for conducting the audits. Affirm that written audit reports will be prepared and submitted to facility management.

14.2 Compliance Audits

Describe the monitoring program established to ensure compliance with existing regulations. Identify by organizational title the persons assigned responsibility for conducting the audits. Affirm that written audit reports will be prepared and submitted to facility management.

PART III PHYSICAL SECURITY PLAN

FOR SPECIAL NUCLEAR MATERIALS IN TRANSIT

The physical security plan for protection of special nuclear materials (SNM) in transit should describe how the applicant will ship SNM and should explain in detail how the physical protection requirements in 10 CFR Part 73 pertaining to transportation will be met.

CHAPTER 15 SCOPE OF THE PLAN

Identify which of the following activities the plan will cover:

1. Take delivery of SNM
2. Release SNM for transport
3. Transport SNM by road
4. Ship SNM by air
5. Ship SNM by rail
6. Ship SNM by sea (or water)
7. Import SNM
8. Export SNM
9. Other (describe briefly)

CHAPTER 16 PLANNING

16.1 Shipments Involving Common or Contract Carriers

If common or contract carriers will be used, discuss the contingencies anticipated and the arrangements to be made with the selected carriers to ensure that they will provide for the protection of SNM in accordance with the requirements of 10 CFR Part 73. Include as a part of this plan a copy of the common or contract carrier's security plan showing that SNM will be transported under an established system that provides for the physical protection of valuable material in transit and that requires an exchange of hand-to-hand receipts at origin, at destination, and at all points en route where there is a transfer of custody of the SNM shipment. Discuss the actions that will be taken to determine whether the carrier is providing the level of protection agreed to. Also discuss the action to be taken if a carrier has failed to provide that level of protection. Confirm that SNM air shipments involving in excess of 20 grams or 20 curies of plutonium or uranium 233, or in excess of 350 grams of uranium 235 (contained in uranium enriched to 20 percent or more in the U-235 isotope), will be made only by cargo aircraft.

16.2 Transit Time

Discuss the provisions that will be made to ensure that transit times of SNM shipments will be minimized and that routes will be selected to avoid areas of natural disaster or civil disorder. Discuss arrangements that will be made with the carrier for changing the scheduled delivery time if and when ordinary delays en route make delivery at the prearranged time impossible.

16.3 Transfers

16.3.1 Shipments by Road

Discuss the means to be used to ensure that shipments will be made without intermediate stops for transfers from the time the SNM shipment is placed aboard the transport vehicle until it arrives at the facility of the receiver.

16.3.2 Shipments by Sea or Water

Discuss the means to be used to ensure that there will be no scheduled transfers to other vessels. Discuss the means to be used to ensure that the selected vessel will be making the minimum ports of call after the SNM shipment is taken aboard.

16.4 Secure Compartment for Shipments by Sea

Discuss criteria to be used for establishing requirements for a secure compartment in which the SNM shipment will be placed. Discuss the arrangements to be made for such a compartment.

16.5 En Route Storage

Describe what will be done to avoid en route storage in excess of 24 hours.

16.6 Communications Planning

For shipments by rail or by road, explain the provisions to be made for establishing and maintaining a point of communications for receiving and responding to messages concerning the location and status of each SNM shipment.

CHAPTER 17 EQUIPMENT FOR THE PROTECTION OF SNM SHIPMENTS

17.1 Vehicles for Shipments by Road

State whether the transportation vehicles will be under the control of the applicant (owned, leased, or rented) or under the control of a contract or common carrier. Identify which of the following options for shipment of SNM by road will be used: (1) motor vehicle with separate escort vehicle, (2) special vehicle with high penetration resistance and armed guards, or (3) special vehicle with high penetration resistance and immobilization features, but no armed guards. If a special vehicle is to be used, discuss the provisions for achieving high penetration resistance and immobilization, as appropriate. Include drawings and specifications that describe the protection features of the special vehicle. Features acceptable to the NRC staff for implementing option (2) above are discussed in Regulatory Guide 5.31, "Specially Designed Vehicle with Armed Guards for Road Shipment of Special Nuclear Material."

17.2 Communications Equipment

17.2.1 Shipments by Road or Rail

Describe the communications equipment to be used for communicating the location and status of each shipment while en route. Regulatory Guide 5.32, "Communication with Transport Vehicles," provides information on radiotelephones and systems and procedures for disguising position data.

17.2.2 Shipments by Road Involving Escorts

Describe the communications equipment that will be used to provide continuous radio communication capability between the escort vehicle and the transport vehicle.

17.3 Seals and Locks

Describe the types of tamper-indicating seals that will be used. Refer to Regulatory Guides 5.10, "Selection and Use of Pressure-Sensitive Seals on Containers for Onsite Storage of Special Nuclear Material," and 5.15, "Security Seals for the Protection and Control of Special Nuclear Material." Describe the types of locks to be used for locking shipping containers or for locking vehicle compartments that contain the shipment. Refer to Regulatory Guide 5.12, "General Use of Locks in the Protection and Control of Facilities and Special Nuclear Materials." Discuss the procedures used for tamper-safing.

17.4 Containers

State whether shipments will be made by "open vehicles," i.e., by vehicles that do not provide a compartment in which the shipment can be locked. If so, describe the containers that will be used and the locking arrangements for these containers. Note that the 500-pound weight requirement in the regulation refers to the total weight of the loaded container, rather than to the weight of the shipping container alone.

17.5 Transport Vehicle Markings

For SNM shipments by road, discuss how vehicles will be marked to aid in identifying the vehicle. Discuss plans for ensuring that records of these markings will be kept available for reference. Regulatory Guide 5.17, "Truck Identification Markings," sets forth criteria for markings that are acceptable to the NRC staff.

17.6 Security Personnel Equipment

Describe the equipment, including firearms, to be provided to the security force for protecting shipments. Discuss the authority of the security force to carry and use firearms in relation to state and local laws.

CHAPTER 18 SECURITY PERSONNEL

18.1 General Description

Describe and discuss the duties and responsibilities of the physical security organization to protect SNM shipments. In addition to other information, the description should specify the organizational position and show the relationship between the following elements: (1) the individual who will be responsible for the planning and execution of the program for the protection of SNM shipments, (2) the individual who will be in charge of the team that physically accompanies a shipment, (3) the individuals who will monitor transfers, (4) the agents and nonemployees who have a role in the protection of SNM shipments, (5) the individuals who will be responsible for receiving and recording location information while the shipment is en route, and (6) the individual who will be responsible for notifying an appropriate law enforcement agency and the NRC.

Regulatory Guide 5.20, "Training, Equipping, and Qualifying of Guards and Watchmen," should assist with preparing the following information.

18.2 Selection

Describe the criteria to be used for screening and selecting individuals who will be responsible for protecting SNM shipments.

18.3 Training

Provide an outline of the security force training program, including a listing of the major topics to be covered and the estimated training time for each. The training program should cover both normal operations and threat situations. Discuss the training in the use of firearms, including marksmanship.

18.4 Qualification

Discuss the tests or other means to be used to ensure that each guard is qualified to perform his assigned duties. Furnish a copy of a typical test or list of questions that will be used to determine the qualifications of a candidate. Discuss the program to be used to requalify guards annually.

CHAPTER 19 OPERATIONS

19.1 Communications Operations

For SNM shipments by road, rail, or sea, discuss the organization and physical location of persons who will be predesignated to receive communications from the occupants of transport vehicles en route. Describe the procedures to be used to make periodic reports of the location and status of SNM shipments en route. Specify the time intervals for routine reports, the maximum period of elapsed time permitted with no report, and the action to be taken if planned or scheduled reports are not received.

Describe the method or system to be used to test operability and to verify functional performance of all communications equipment related to physical protection of SNM in transit. Specify the frequency of all routine and special tests and inspections.

19.2 Escorts

19.2.1 Shipments by Road

Discuss the duties of the people who will accompany the shipment in the vehicle containing the SNM shipment. Describe the procedures to be employed to ensure that at least one of these persons maintains continuous visual surveillance of the SNM cargo vehicle at all times during a shipment.

19.2.2 Shipments by Road or by Rail

For shipments other than those to be made in a specially designed truck or trailer, confirm that the appropriate number of armed guards and convoy vehicles will be used. Describe the procedures and methods to be used to ensure that such escorts will maintain continuous vigilance to detect the presence of conditions that might threaten the security of SNM and to ensure that the escorts will take such actions as circumstances might require to avoid interference with continuous safe passage of SNM vehicles. Describe the actions to be taken in the event of an emergency and to check and observe SNM cargo vehicles during stops, breakdowns, or layovers.

19.2.3 Export Shipments by Sea or by Air

For air or water export shipments, describe the procedures and methods to be used to ensure that (1) SNM shipments will be escorted by the appropriate number of armed authorized individuals from the time the

aircraft or vessel departs from the last terminal in the United States until the shipment is unloaded at a foreign terminal; (2) during scheduled intermediate stops where SNM is not scheduled for transfer, the authorized individual will observe the opening of cargo compartments to ensure that SNM shipments are not removed; and (3) authorized individuals will maintain continuous visual surveillance of the cargo compartments containing SNM until departure of the loaded aircraft or vessels from the point of shipment.

19.3 Monitors

19.3.1 Nuclear Shipment Not Scheduled for Transfer

For modes of shipment other than by road, describe the procedures and methods to be used to ensure that at scheduled intermediate stops guards or designated alternates will (1) observe the opening of cargo compartments to ensure that SNM shipments are not removed, (2) maintain continuous visual surveillance of cargo compartments until shipments depart from the intermediate stop, and (3) notify the applicant or his agent of the status of shipments at departure from each intermediate stop.

19.3.2 Nuclear Shipment Scheduled for Transfer

Discuss the plan to be used to monitor scheduled transfers of each SNM shipment, including monitoring of the shipment while it is in storage en route. Describe the procedures and methods to be used to ensure that all transfers of SNM (such as from carriers to storage, between carriers, or from storage to carriers) will be under the continuous visual surveillance of at least two guards or designated alternates. Confirm that the guards will observe the opening of cargo compartments containing incoming SNM and examine shipment locks and seals, will observe the SNM while it is in a terminal or in storage, will observe the SNM while it is being loaded, and will maintain surveillance of the cargo compartment until the vehicle or vessel departs from the terminal.

Describe the procedures to be used by the guards to notify the applicant or his agent of the status of the SNM at departure time. State who will immediately notify the applicant or his agent and responsible carriers of any deviation from or attempted interference with the schedule or routing of SNM shipments. Confirm that preplanned storage time of SNM shipments en route in excess of 24 hours will be avoided.

19.4 Miscellaneous Shipper Responsibilities

19.4.1 Locking

For each mode of transportation to be used, describe the means to be employed to ensure that either the SNM container is locked or the vehicle

compartment containing the shipment is locked. Regulatory Guide 5.12, "General Use of Locks in the Protection and Control of Facilities and Special Nuclear Materials," gives guidance for the selection and use of locks. Locks that are suitable for use at protected area barriers are also suitable for use in the protection of special nuclear material in transit.

19.4.2 Notification of Consignee

Outline the plan to be used to notify a consignee of an impending SNM shipment. Describe the procedure and methods to be used to ensure that when SNM is delivered to a carrier for transport, the consignee (domestic or foreign) will be immediately notified by telegraph, teletype, or telephone of the departure times, the methods of transportation (including the names of carriers), and the estimated times of arrival of each shipment at its destination. Confirm that such procedures will also provide that the consignee will immediately notify the consignor by telegraph, teletype, or telephone when each SNM shipment arrives at its destination.

19.4.3 F.O.B. Shipments

If f.o.b. shipments will be made, describe the procedure and methods to be used to ensure that (1) written certification will be obtained from licensees who take delivery of SNM shipments at the f.o.b. point, (2) arrangements have been made to meet NRC requirements set forth in 10 CFR Part 73 for the physical protection of the SNM during transit, or (3) if the consignee is an NRC license-exempt contractor, a written certification will be obtained stating that physical protection arrangements required by the ERDA Manual (formerly the AEC Manual), Chapter 2401 or 2405, have been made.

19.4.4 Arrangements to Obtain Information from Foreign Consignee

Discuss the arrangements that will be made with a foreign consignee to be notified of the arrival of the shipment at the destination and to be notified of a shipment that is lost or unaccounted for after the estimated time of arrival at its destination.

19.4.5 Notification of NRC

Discuss the conditions or circumstances under which the NRC will be notified. State the position title and organizational unit of the individuals who will be responsible for informing the NRC of accidents, unusual occurrences, contingencies (as discussed in Chapter 20), or the failure of SNM shipments to arrive at their destination at the estimated time of arrival. Identify the types of reports to be made and describe the procedures to be followed in making such reports.

19.4.6 Conduct of Trace Investigation

State the position title and organizational unit of the individuals who will be responsible for the initiation and conduct of trace investigations of lost or unaccounted-for shipments. State the criteria for such actions, the scope and extent of the planned investigations, the report content, and the procedures to be followed to ensure that the results of the investigation will be reported to the NRC and the person who delivered the material to a carrier for transport.

19.4.7 Shipper Records

Describe the system to be used to record and maintain records, such as those listed below, to demonstrate that the requirements of the NRC with respect to the protection of SNM shipments will be met on a continuous basis.

1. Names of carriers
2. Major roads used
3. Flight numbers
4. Dates and times of departures and arrivals
5. Names and addresses of monitors
6. Container seal descriptions and identifications
7. Locations and telephone numbers of local law enforcement agencies along the route used
8. Shipping plan changes or modifications
9. Description of the nuclear material, by chemical and physical form, quantity, and enrichment
10. Testing and operability of communications equipment
11. Names of individuals who receive communications for or on behalf of the applicant
12. Reports of communications
13. Reports of trace investigations
14. Violations or infractions of the applicant's instructions or requirements.

State how the information in items 1 through 9 will be kept confidential.

19.5 Miscellaneous Consignee Responsibilities

19.5.1 Notifications

Specify the position title and organizational unit of the individuals who will be responsible for notifying the person who delivered the shipment to a carrier for transport that the shipment has been received. Specify the organizational position of the individual who will be responsible for notifying the shipper and the NRC in the event of a late or lost shipment. Discuss the criteria that will be used in arriving at a decision to make such a notification.

19.5.2 Consignee Records

Specify the position title and organizational unit of the individuals who will be responsible for maintaining protection records pertaining to SNM in transit.

19.5.3 Import Shipments

Describe the procedures and methods to be used to ensure that SNM shipment container counts and lock and seal examinations are made to detect any evidence of tampering at the first place in the United States at which the shipment is discharged from the arriving carrier.

(NOTE: Information with respect to SNM shipments when in terminals or in storage should be included in Section 19.3.2).

CHAPTER 20 LOCAL LAW ENFORCEMENT AUTHORITIES

This chapter should describe the arrangements that have been made with local law enforcement authorities for help and assistance.

20.1 Notification of Local Law Enforcement Authorities

Discuss the conditions or circumstances under which the local law enforcement authorities (LLEA) will be notified. Specify the position title and organizational unit of the individuals who will be responsible for notifying the LLEA. Discuss the criteria to be used by the above individuals in deciding which LLEA to notify if a call for help is received from a distant vehicle or if a scheduled call to report the location of a vehicle is not received.

20.2 Establishing Contacts

Describe the contacts that have been established with law enforcement authorities at intervals along the shipping routes to provide assistance when requested if a shipment convoy is threatened, attacked, or hijacked while en route.

20.3 Contact Renewals

Describe the procedures for periodically reviewing (or reaffirming) the liaison with the LLEA to provide assistance, as needed, to ensure the continued security and safety of the shipments.

CHAPTER 21 TRANSPORTATION SECURITY AUDITS

The purpose of this chapter is to describe the audit programs established to review periodically the applicability and adequacy of the Physical Security Plan for Special Nuclear Materials in Transit and to assess the compliance of current performance with the existing security requirements.

21.1 Program Audit

Describe the scope, extent, and frequency of planned periodic management audits to review the transportation security program for continued adequacy and effectiveness. Identify by organizational title the individuals assigned responsibility for conducting the audits. Affirm that written audit reports will be prepared and submitted to facility management.

21.2 Compliance Audits

Provide a description of the monitoring program established to ensure compliance with existing regulations. Identify by organizational title the individuals assigned responsibility for conducting the audits. Affirm that written audit reports will be prepared and submitted to facility management.

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