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Standard Review Plan
for Physical Protection Plans for the Independent Storage of Spent Fuel and High-Level Radioactive Waste

U.S. Nuclear Regulatory Commission

Office of Nuclear Material Safety and Safeguards

P.A. Dwyer

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NUREG–1619

Standard Review Plan

For Physical Protection Plans for the Independent Storage of Spent Fuel And High-Level Radioactive Waste

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ABSTRACT

This document is a standard review plan (SRP) for evaluating plans for the physical protection of spent fuel and high-level radioactive wastes stored at (1) independent spent fuel storage installations, (2) monitored-retrievable storage installations, and (3) the geologic repository operations area. Conducting a review according to an SRP ensures that license applicants address every pertinent Nuclear Regulatory Commission (NRC) requirement in their NRC-approved physical protection plans and ensures consistency and comprehensiveness in the NRC review of the plans. The information presented here takes a new matrix or "modular" format to streamline the information and facilitate its use.

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1 INTRODUCTION

1.1 Background and Applicability

The U.S. Nuclear Regulatory Commission (NRC) has prepared regulations for the physical protection of spent fuel and high-level radioactive waste stored at (1) independent spent fuel storage installations (ISFSIs), (2) monitored-retrievable storage (MRS) installations, or (3) the future geologic repository operations area codified under 10 CFR 73.51. These regulations specify the physical protection measures a licensee must observe at affected sites and to which a licensee must commit in its NRC-approved physical protection plan.

1.2 Purpose of Document

This document is a standard review plan (SRP) for use by NRC license reviewers in evaluating physical protection plans prepared pursuant to 10 CFR 60.21(b)(3) (for MRS installations and the geologic repository) and 10 CFR 72.24 (for ISFSIs). The SRP contains the requirements that a licensee must meet and address in its physical protection plan and also contains additional information to be used as guidance in the implementation of the regulations. The NRC staff uses the SRP to assure comprehensive and consistent license reviews. This document is of use to license applicants or licensees seeking an amendment to their license because it presents a format acceptable to NRC for the required physical protection plan and concisely describes the requirements that the applicant or licensee must meet. This document supersedes any interim licensing guidance published before 10 CFR 73.51 was issued.

1.3 Description of Document

This document contains nine modules that make up the major elements of physical protection plans for meeting the requirements of 10 CFR 73.51. The plans must meet the intent of every requirement presented in each module. Following each module is a "Guidance" section that contains supplemental information on the NRC's interpretation of the regulations, acceptable means for meeting the regulation, and other pertinent information. Three appendices contain recommendations on plan format, a user's glossary, and a sample license condition. (See Appendices A, B, and C.)

1.4 Modular Format

This SRP has been developed in a new modular format. This effort is part of a new initiative by NRC to simplify, and gain efficiencies in, the NRC licensing process by presenting information in a user-friendly format.

1.5 Protection of Plan

Physical protection plans for the storage of spent fuel and high-level radioactive waste should be protected as Safeguards Information in accordance with the provisions of 10 CFR 73.21.

2 BASIC STEPS IN THE PHYSICAL PROTECTION LICENSING PROCESS

There are four steps in the NRC evaluation of physical protection plans required to be submitted by NRC regulations: submittal, initial review, final review, and issuance of a license condition.

The submittal process can be prompted by the issuance of a new rule or amendments to an existing regulation or it can be prompted by a request from the licensee. During this process, the applicant or licensee develops its protection strategy for meeting the new or amended requirement (or the voluntary request) and documents it in a letter to the NRC licensing staff, for review and comment.

The initial review process is an iterative process in which discussions take place between NRC and the licensee or applicant to arrive at a proposal acceptable to NRC. A number of proposals may be submitted and evaluated during this process. The license reviewer, guided by an SRP, informally ensures that the proposal agreed to is adequate and sufficient in meeting NRC requirements.

The licensee or applicant then makes a formal and final submittal of its proposal. License reviewers document their formal review of the proposal in a Safeguards Evaluation Report (SER), which is stored and maintained on file for the life of the license.

The physical protection licensing process ends when a license condition is attached to the main license. The license condition contains the commitments made by the licensee or applicant to meet the new or amended proposal and becomes a permanent part of the license, unless it is amended at some future time. Appendix C to this document contains a sample license condition that has been attached to a license in response to new or amended physical protection requirements or measures.

3 INCORPORATION BY REFERENCE

In addition to the information contained in this SRP, the following documents are incorporated by reference, as guidance to support the review process:

- Regulatory Guide 5.12, *General Use of Locks in the Protection and Control of Facilities and Special Nuclear Materials.* U.S. Nuclear Regulatory Commission. November 1973.

- Regulatory Guide 5.44, *Perimeter Intrusion Alarm Systems,* Rev. 3. U.S. Nuclear Regulatory Commission. October 1997.

- NUREG-0794, *Protection of Unclassified Safeguards Information.* U.S. Nuclear Regulatory Commission. October 1981.

4 COMPONENTS OF PHYSICAL PROTECTION PLAN

4.1 MODULE I -- INTRODUCTION AND EFFECTIVE DATE OF RULE	
4.1.1 Introduction	The licensee should present a general description of the facility, including name, location, corporation, type of facility, etc.
4.1.2 Effective date of rule	The rule is effective November 12, 1998.

GUIDANCE:

No additional guidance is provided for this module.

4.2 MODULE II -- GENERAL PERFORMANCE OBJECTIVE AND PROTECTION GOAL	
4.2.1 Objective	Each licensee shall establish and maintain a physical protection system with the objective of providing high assurance that activities involving special nuclear material do not constitute an unreasonable risk to public health and safety. 10 CFR 73.51(b)(1).
4.2.2 Performance capabilities	To meet the general objective of paragraph 73.51(b)(1), each licensee shall meet the following performance capabilities: (1) Store the spent fuel and high-level radioactive waste only within a protected area; (2) Grant access to the protected area only to individuals who are authorized to enter the protected area; (3) Detect and assess unauthorized penetration of or activities within the protected area; (4) Provide timely communication to a designated response force whenever necessary; and (5) Manage the physical security organization in a manner that maintains its effectiveness. 10 CFR 73.51(b)(2).
4.2.3 Protection goal	The physical protection system must be designed to protect against loss of control of the facility that could be sufficient to cause radiation exposure exceeding the dose as described in 10 CFR 72.106. 10 CFR 73.51(b)(3).

GUIDANCE:

4.2.3 The design-basis threat for radiological sabotage of power reactors under 10 CFR 73.1 is not considered appropriate for the types of facilities subject to 10 CFR 73.51. Hence, a separate protection goal is defined for these facilities.

4.3 MODULE III -- SECURITY ORGANIZATION	
4.3.1 Establishment of security organization	A security organization with written procedures must be established. The security organization must include sufficient personnel per shift to provide for monitoring of detection systems and the conduct of surveillance, assessment, access control, and communications to assure adequate response. 10 CFR 73.51(d)(5).
4.3.2 Security audits	The physical protection program must be reviewed once every 24 months by individuals independent of both physical protection program management and personnel who have direct responsibility for implementation of the physical protection program. The physical protection program review must include an evaluation of the effectiveness of the physical protection system and a verification of the liaison established with the designated response force or local law enforcement agency. 10 CFR 73.51 (d)(12).
4.3.3 Qualifications for employment in security	Members of the security organization must be ...qualified... to perform assigned job duties in accordance with Appendix B to Part 73, sections I.A.(1)(a) and (b); B(1)(a); and the applicable portions of II. 10 CFR 73.51(d)(5).
4.3.4 Security force training	Members of the security organization must be trained, equipped, qualified, and requalified to perform assigned job duties in accordance with Appendix B to Part 73, sections I.A.(1)(a) and (b); B(1)(a); and the applicable portions of II. 10 CFR 73.51(d)(5).

4.3 MODULE III -- SECURITY ORGANIZATION	
4.3.5 Records	The following documentation must be retained as a record for three years after the record is made or until termination of the license. Duplicate records to those required under 10 CFR 72.180 and 10 CFR 73.71 need not be retained. (1) A log of individuals granted access to the protected area, (2) screening records of members of the security organization, (3) a log of all patrols, (4) a record of each alarm received identifying the type of alarm, location, date and time when received, and disposition of the alarm, and (5) the physical protection program review reports. 10 CFR 73.51(d)(13).

GUIDANCE:

4.3.3 Appendix B to Part 73, section I.A.(1)(a) requires that the individual possess a high school diploma or pass an equivalent performance examination designed to measure basic job-related, mathematical, language, and reasoning skills, ability, and knowledge required to perform security job duties.

Appendix B to Part 73, I.A.(1)(b) requires that the individual have no felony convictions involving the use of a weapon and no felony convictions that reflect on the individual's reliability.

Appendix B to Part 73, B (1)(a) requires that individuals whose security tasks and job duties are directly associated with the effective implementation of the licensee physical protection and contingency plans must have no physical weakness or abnormalities that would adversely affect their performance of assigned security job duties.

4.4 MODULE IV -- PHYSICAL BARRIER SYSTEMS	
4.4.1 General layout	Spent nuclear fuel and high-level radioactive waste must be stored only within a protected area so that access to this material requires passage through or penetration of two physical barriers, one barrier at the perimeter of the protected area and one barrier offering substantial penetration resistance. 10 CFR 73.51(d)(1).
4.4.2 Physical barriers	The physical barrier at the perimeter of the protected area must be as defined in 10 CFR 73.2. Isolation zones, typically 6 meters [20 feet] wide each, on both sides of this barrier, must be provided to facilitate assessment. The barrier offering substantial resistance to penetration may be provided by an approved storage cask or building walls such as those of a reactor or fuel storage building. 10 CFR 73.51 (d)(1).
4.4.3 Primary alarm station and security posts	The perimeter of the protected area must be subject to continual surveillance and be protected by an active intrusion alarm system that is capable of detecting penetration through the isolation zone and that is monitored in a continually staffed primary alarm station and in one additional continually staffed location. The primary alarm station must be located within the protected area; have bullet-resisting walls, doors, ceiling, and floor; and the interior of the station must not be visible from outside the protected area. A timely means for assessment of alarms must also be provided. Regarding alarm monitoring, the redundant location need only provide a summary indication that an alarm has been generated. 10 CFR 73.51(d)(3).

4.4 MODULE IV -- PHYSICAL BARRIER SYSTEMS	
4.4.4 Illumination	Illumination must be sufficient to permit adequate assessment of unauthorized penetration of or activities within the protected area. 10 CFR 73.51(d)(2).

GUIDANCE:

4.4.2 A physical barrier means (1) fences constructed of No. 11 American wire gauge or heavier wire fabric, topped by three strands or more of barbed wire or similar material on brackets angled inward or outward between 30 and 45 degrees from the vertical with an overall height of not less than 2.4 meters [8 feet], including the barbed topping; (2) building walls, ceilings, and floors constructed of stone, brick, cinder block, concrete, steel, or comparable material (openings in which are secured by grates, doors, or covers of construction and fastening of sufficient strength such that the integrity of the wall is not lessened by any opening), or walls of similar construction, not part of a building, provided with a barbed topping as described in paragraph (1) of this definition of a height of not less than 2.4 meters [8 feet]; or (3) any other physical obstruction constructed in a manner and of material suitable for the purpose for which the obstruction is intended.

Vehicle barriers to protect against the malevolent use of a vehicle are not presently required at sites subject to 10 CFR 73.51.

4.4.3 The alternate station may be located at the local law enforcement agency or at a commercial alarm monitoring station that has a redundant capability for contacting local law enforcement personnel.

4.4.4 Illumination should be maintained during all periods of darkness (not just during periods of assessment). The level of illumination should be sufficient for the assessment means used. No required illumination level is specified in 10 CFR 73.51. It is also recognized that the physical nature of an ISFSI may make it difficult to maintain a consistent level of illumination throughout the protected area because of obstruction from such structures as storage casks.

4.5 MODULE V -- ACCESS CONTROL SUBSYSTEMS AND PROCEDURES	
4.5.1 Identification system	A personnel identification system ... must be established and maintained to limit access to authorized individuals. 10 CFR 73.51(d)(7).
4.5.2 Access to protected areas	All individuals, vehicles, and hand-carried packages entering the protected area must be checked for proper authorization ... before entry. 10 CFR 73.51(d)(9).
4.5.3 Access controls at the protected area	All individuals, vehicles and hand-carried packages entering the protected area must be ... visually searched for explosives before entry. 10 CFR 73.51(d)(9).
4.5.4 Escorts and escorted individuals	N/A (See Guidance below.)
4.5.5 Key and lock control	A ... controlled lock system must be established and maintained to limit access to authorized individuals. 10 CFR 73.51(d)(7).
4.5.6 Records	The following documentation must be retained as a record for 3 years after the record is made or until termination of the license. Duplicate records to those required under 10 CFR 72.180 and 10 CFR 73.71 need not be retained under the requirements of this section: (1) a log of individuals granted access to the protected area; (2) screening records of members of the security organization; (3) a log of all patrols; (4) a record of each alarm received, identifying the type of alarm, location, date and time when received and disposition of the alarm; and (5) the physical protection program review reports. 10 CFR 73.51(d)(13).

GUIDANCE:

4.5.1 The personnel identification system should provide unique identification of individuals granted access to the protected area through such means as a picture identification system using a driver's license photograph, a name badge system using a badge medium that is difficult to counterfeit, or facial recognition. Use of facial recognition should be justified (e.g., long-term employment and small site population).

4.5.4 If an individual can be conclusively identified, is authorized access, and has been searched for explosives without positive findings, then no escort is required. If the individual cannot meet any one of these three criteria, access to the protected area should be denied.

4.5.5 Regulatory Guide 5.12, *General Use of Locks in the Protection and Control of Facilities and Special Nuclear Materials* (November 1973), should be used as guidance in the development of a controlled lock system.

4.5.6 The applicant or licensee need not describe redundant recordkeeping requirements under each module of the plan. Only the records pertinent to the particular module need be described.

4.6 MODULE VI -- DETECTION, SURVEILLANCE, AND ALARM SUBSYSTEMS	
4.6.1 Isolation zone penetration	Spent nuclear fuel and high-level radioactive waste must be stored only within a protected area so that access to this material requires passage through or penetration of two physical barriers, one at the perimeter of the protected area and one barrier offering substantial penetration resistance. The physical barrier at the perimeter of the protected area must be as defined in 10 CFR 73.2. Isolation zones, typically 6 meters [20 feet] wide each, on both sides of this barrier, must be provided to facilitate assessment.... 10 CFR 73.51(d)(1).
4.6.2 Alarm annunciation at security posts	The perimeter of the protected area must be subject to continual surveillance and be protected by an active intrusion alarm system that is capable of detecting penetration through the isolation zone and that is monitored in a continually staffed primary alarm station and one additional continually staffed location... A timely means of assessment must also be provided. With respect to alarm monitoring, the redundant location need only provide a summary indication that an alarm has been generated. 10 CFR 73.51(d)(3).
4.6.3 Power sources	All detection systems and supporting subsystems must be tamper indicating with line supervision. These systems, as well as surveillance/assessment and illumination systems, must be maintained in operable condition. 10 CFR 73.51(d)(11).
4.6.4 Component supervision	All detection systems and supporting subsystems must be tamper indicating with line supervision. 10 CFR 73.51(d)(11).

4.6 MODULE VI -- DETECTION, SURVEILLANCE, AND ALARM SUBSYSTEMS	
4.6.5 Protected area monitoring and assessment	The perimeter of the protected area must be subject to continual surveillance and be protected by an active intrusion alarm system which is capable of detecting penetration through the isolation zone and that is monitored in a continually staffed primary alarm station and in one additional continually staffed location. 10 CFR 73.51(d)(3). Isolation zones, typically 6 meters [20 feet] wide each on both sides of this barrier (the protected area barrier) must be provided to facilitate assessment. 10 CFR 73.51(d)(1). The protected area must be monitored by daily random patrols. 10 CFR 73.51(d)(4). A timely means of assessment of alarms must also be provided. 10 CFR 73.51(d)(3).

GUIDANCE:

4.6.2 The licensee or applicant should follow the guidelines of Regulatory Guide 5.44, *Perimeter Intrusion Alarm Systems,* Rev. 3, regarding alarm annunciation.

4.6.5 The following factors should be considered in determining frequency of random patrols: remoteness of facility, nature of activities located adjacent to the site, and size of the storage facility. For example, a minimum of two patrols per day should be conducted unless the facility is in a remote area where more patrols may be necessary.

4.7 MODULE VII -- COMMUNICATIONS SUBSYSTEMS	
4.7.1 Security force communications	A security organization with written procedures must be established. The security organization must include sufficient personnel per shift to provide for...the conduct of...communications to assure adequate response. 10 CFR 73.51(d)(5).
4.7.2 Alarm station communications	Redundant communications capability must be provided between onsite security force members and the designated response force or local law enforcement agency. 10 CFR 73.51(d)(8).
4.7.3 Power sources	All detection systems, surveillance/assessment systems, and supporting subsystems ... as well as illumination systems, must be maintained in operable condition. 10 CFR 73.51(d)(11) .

GUIDANCE:

No additional guidance is provided under this module.

4.8 MODULE VIII -- EQUIPMENT OPERABILITY AND COMPENSATORY MEASURES	
4.8.1 Equipment operability	All detection systems and supporting subsystems must be tamper indicating with line supervision. These systems, as well as surveillance/assessment and illumination systems, must be maintained in operable condition. 10 CFR 73.51(d)(11).
4.8.2 Compensatory measures	Timely compensatory measures must be taken after discovery of in operability to assure that the effectiveness of the system is not reduced. 10 CFR 73.51(d)(11).
4.8.3 Testing and maintenance	All detection systems and supporting subsystems must be tamper indicating with line supervision. These systems, as well as surveillance/assessment and illumination systems, must be maintained in operable condition. 10 CFR 73.51(d)(11).

GUIDANCE:

4.8.3 The test and maintenance program described in Regulatory Guide 5.44, *Perimeter Intrusion Alarm Systems,* Rev. 3, is an acceptable program for maintaining equipment in operable condition.

4.9 MODULE IX -- CONTINGENCY RESPONSE PLAN AND PROCEDURES	
4.9.1 Contingency plan documentation	Written response procedures must be established and maintained for addressing unauthorized penetration of or activities within the protected area including Category 5, "Procedures," of Appendix C to Part 73. 10 CFR 73.51(d)(10).
4.9.2 Response force liaison	Documented liaison with a designated response force or local law enforcement agency must be established to permit timely response to unauthorized penetrations or activities. 10 CFR 73.51)(d)(6).
4.9.3 Response procedures	Written response procedures must be established and maintained for addressing unauthorized penetration of or activities within the protected area including Category 5, "Procedures," of Appendix C to Part 73. 10 CFR 73.51(d)(10) .
4.9.4 Records	The licensee shall retain a copy of response procedures as a record for 3 years or until termination of the license for which the procedures were developed. 10 CFR 73.51(d)(10).

GUIDANCE:

4.9.2 The designated response force could be a privately contracted security force that meets the requirements of Appendix B to Part 73. If the designated response force cannot respond in a timely manner, additional protective measures may be required, including the use of armed guards.

4.9.3 It is expected that the contingency plan for the storage of spent fuel and high-level radioactive waste will not be as extensive as the plan described for power reactors under Appendix C to Part 73. The contingency plan for the storage of spent fuel and high-level radioactive waste should, as a minimum, include Category 5, "Procedures," of Appendix C to Part 73.

APPENDIX A -- RECOMMENDED FORMAT FOR PHYSICAL PROTECTION PLAN

If the recommended format is used, the applicant should adhere to the numbering system of this standard review plan. Under certain circumstances, subsections may not be appropriate for a specific application. Clearly state if this is so and give enough information to support this conclusion.

The applicant may wish to submit information in support of an 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 in an appendix to the plan.

Upon completion of the plan, the applicant should use the table of contents of this document as a checklist to ensure that each subject has been addressed.

A.1 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.

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

Where numerical values are stated, the number of significant figures should reflect the 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 in which they are first referenced. Care should be taken to ensure that the 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 people with good vision.

A.2 Physical Specifications of Submittal

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

A.2.1 Paper Size

Text: Paper should measure 21.5 x 28 centimeters [8.5 x 11 inches].

Drawings and graphics: 16 x 23 centimeters [6.5 x 9 inches] (to allow for margins) is preferred; however, a larger size is acceptable as long as the finished copy, when folded, does not exceed 21.5 x 28 centimeters [8.5 x 11 inches].

A.2.2 Paper Stock and Ink

Good quality white laser or photocopy paper and consistent ink density for clear reproduction by microfilming, photocopying, and printing.

A.2.3 Paper Margins

A margin of no less than 2.5 centimeters [1 inch] is to be maintained on the top, bottom, right side, and left side of all pages submitted.

A.2.4 Printing

Composition: Text pages should be single spaced. Standard NRC type face and style should be used.

Reproduction: May be printed or photocopied. Except for an oversized figure, all pages of the text will be printed on both sides.

A.2.5 Binding

Pages should be punched for a 3-ring loose leaf notebook.

A.2.6 Page Numbering

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

A.3 Procedures for Revising Pages

The updating or revising of data should be on a replacement page basis. The changes (revised portion of each page) should be highlighted by a vertical line on the margin opposite the binding margin (outside margin) for each line changed, revised, deleted or added. All pages submitted to update, revise, add, or delete pages to the plan shall show the date of the change. The transmittal letter should include the index page listing the pages to be inserted and the pages to be removed. When major changes, deletions, or additions are made, pages for a revised table of contents should be provided.

A.4 Number of Copies

The applicant should submit the appropriate number of copies of each requested submittal in accordance with 10 CFR 72.16.

A.5 Public Disclosure

NRC has determined that it is not in the public interest to disclose the details of physical protection programs, and that such details should be protected as Safeguards Information pursuant to 10 CFR 73.21

A.6 Compatibility

The applicant should ensure that information in the physical protection plan does not conflict with the other sections of the application.

A.7 Schedule for Submittal

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

APPENDIX B – GLOSSARY OF TERMS

These terms are excerpted from Title 10 of the *Code of Federal Regulations* (10 CFR Parts 72 and 73).

Independent spent fuel storage installation (ISFSI) – A complex designed and constructed for the interim storage of spent nuclear fuel and other radioactive materials associated with spent fuel storage. An ISFSI that is located on the site of another facility may share common utilities and services with such a facility and be physically connected to such other facility and still be considered independent, provided that such sharing of utilities and services or physical connections does not (1) increase the probability or consequences of an accident or malfunction of components, structures, or systems that are important to safety or (2) reduce the margin of safety as defined in the basis for any technical specification of either facility.

Isolation zone – Any area adjacent to a physical barrier, clear of all objects that could conceal or shield an individual.

Monitored-retrievable storage installation (MRS) – A complex designed, constructed, and operated by the Department of Energy for the receipt, transfer, handling, packaging, possessing, safeguarding, and storage of spent nuclear fuel aged for at least one year and solidified high-level radioactive waste resulting from civilian nuclear activities, pending shipment to a high-level waste repository or other disposal site.

Physical barrier – (1) Fences constructed of No.11 American wire gauge, or heavier wire fabric, topped by three strands or more of barbed wire (or similar material) on brackets angled inward or outward between 30 degrees and 45 degrees from the vertical, with an overall height of not less than 2.4 meters [8 feet], including the barbed topping; (2) building walls, ceilings, and floors constructed of stone, brick, cinder block, concrete, steel, or comparable materials (openings in which are secured by grates, doors, or covers of construction and fastening of sufficient strength so that the integrity of the wall is not lessened by any opening), or walls of similar construction, not part of a building, provided with a barbed topping (as described in item 1 of this definition) of a height of not less than 2.4 meters [8 feet]; or (3) any other physical obstruction constructed in a manner and of materials suitable for the purpose for which the obstruction is intended.

Spent nuclear fuel (spent fuel) – Fuel that has been withdrawn from a nuclear reactor following irradiation, has undergone at least one year's decay since being used as a source of energy in a power reactor, and has not been chemically separated into its constituent elements by reprocessing. Spent fuel includes the special nuclear material, byproduct material, source material, and other radioactive materials associated with fuel assemblies.

Strategic special nuclear material – Uranium-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope), uranium-233, or plutonium.

Watchman – An individual, not necessarily uniformed or armed with a firearm, who provides protection for a plant and the special nuclear material therein in the course of performing other duties.

APPENDIX C – SAMPLE LICENSE CONDITION

"The licensee shall follow the physical protection plan entitled: '(Insert facility name) Independent Spent Fuel Storage Installation Physical Protection Plan,' dated (insert date), and as it may be further amended under the provisions of 10 CFR 72.33(e) and 72.84(d)."

(The requirements of 10 CFR Part 73, Appendix B, for guard training and qualification, are incorporated in Appendix C of the approved physical protection plan. The requirements of 10 CFR Part 73, Appendix C, for contingency planning, are incorporated into Chapter 1.9 of the physical protection plan.)

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This document is a standard review plan (SRP) for evaluating plans for the physical protection of spent fuel and high-level radioactive waste stored at (1) independent spent fuel storage installations, (2) monitored retrievable storage installations, and (3) the geologic repository operations area. Conducting a review according to an SRP ensures that license applicants address every pertinent Nuclear Regulatory Commission (NRC) requirement in their NRC-approved physical protection plan and ensures consistency and comprehensiveness in the NRC review of the plans. The information here takes a new matrix or "modular" format to streamline the information and facilitates its use.

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