

NUREG-1456

An Alternative Format for Category I Fuel Cycle Facility Physical Protection Plans

U.S. Nuclear Regulatory Commission

Office of Nuclear Material Safety and Safeguards

P. A. Dwyer



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Manuscript Completed: February 1992
Date Published: June 1992

P. A. Dwyer

Division of Safeguards and Transportation
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555



ABSTRACT

This document provides an alternative format for physical protection plans designed to meet the requirements of Title 10 of the Code of Federal Regulations, Sections 73.20, 73.45, and 73.46. These requirements apply to licensees who operate Category I fuel cycle facilities. Such licensees are authorized to use or possess a formula quantity of strategic special nuclear material. The format described is an alternative to that found under Regulatory Guide 5.52, Rev. 2, "Standard Format and Content of a Licensee Physical Protection Plan for Strategic Special Nuclear Material at Fixed Sites (Other than Nuclear Power Plants)."

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ACKNOWLEDGEMENT

This is to acknowledge individuals who have contributed to the development of this document. These individuals are: Orysia M. Masnyk, Region II, U.S. Nuclear Regulatory Commission; James Noel, Naval Nuclear Fuel Division, Babcock & Wilcox Company; and Jerry C. Stout, Nuclear Fuel Services, Inc.

1. INTRODUCTION

Regulatory Guide 5.52, "Standard Format and Content of a Licensee Physical Protection Plan for Strategic Special Nuclear Material at Fixed Sites (Other than Nuclear Power Plants)" describes the standard format and content suggested by the U.S. Nuclear Regulatory Commission (NRC) for use in preparing fixed site physical protection plans for Category I sites. Such sites are those that use or possess a formula quantity of strategic special nuclear material.

The guide states that NRC does not require conformance with the guide, and that an applicant may also submit an alternative format that provides an equal level of completeness and detail, for NRC review and approval.

This NUREG describes an alternative format for Category I fuel cycle facility physical protection plans. It is intended to provide flexibility to applicants (or licensees) in the development of such plans. NRC does not require conformance to this format. The format does, however, represent a format acceptable to the NRC staff. Additional information on plan submittals may be found in Regulatory Guide 5.52, rev. 2.

This document is intended to be a companion document to NUREG-1322, "Acceptance Criteria for the Evaluation of Category I Fuel Cycle Facility Physical Security Plans."

This document is divided into three major parts. The first part describes the Physical Protection Plan format. The second part outlines the elements of a physical protection program that should be described in the Physical Protection Plan. The third part is a list of selected physical protection documents published by NRC.

2. PHYSICAL PROTECTION PLAN FORMAT

If this format is used, the applicant should follow the numbering system of the format. Under some circumstances, certain subsections may not be applicable to a specific application. If so, this should be clearly stated and sufficient information should be provided to support that conclusion.

The applicant may wish to submit information in support of an application that is not required by 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 NUREG as a checklist to ensure that each subject has been addressed.

2.1 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. 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 sections 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.

2.2 Physical Specifications of Submittals

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

2.2.1 Paper Size

Text pages: 8.5 x 11 inches

Drawings and graphics: 8.5 x 11 inches preferred; however, a larger size is acceptable provided the finished copy, when folded, does not exceed 8.5 x 11 inches.

2.2.2 Paper Stock and Ink

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

2.2.3 Paper Margins

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

2.2.4 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.

2.2.5 Binding

Pages should be punched for looseleaf ring binding.

2.2.6 Page Numbering

Pages should be numbered sequentially throughout the main part of the document. Any appendices may be numbered separately if desired. Each page of the physical

protection plan should contain a page number; a revision number, if applicable; and a date.

2.3 Procedures for Updating or Revising Pages

The updating or revising of data and text should be on a replacement-page basis. The changes or revised portions of each page should be highlighted by a vertical line. The line should be on the margin opposite the binding margin for each line changed or added. All pages submitted to update, revise, or add pages to the report are to show the date of the change. The transmittal letter should include the 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.

2.4 Number of Copies

The applicant should submit the appropriate number of copies of each required submittal in accordance with Section 50.30 of 10 CFR Part 50 and Section 70.21 of 10 CFR Part 70.

2.5 Public Disclosure

NRC has determined that public disclosure of the details of physical protection programs is not in the public interest, and such details are withheld in accordance with 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 submittal of proprietary information should request exemption from public disclosure, as required in paragraph 2.790(b) of 10 CFR Part 2.

2.6 Compatibility

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

2.7 Schedule for Submittal

The applicant should contact NRC to determine a schedule for Physical Protection Plan submittal.

3. PHYSICAL PROTECTION PLAN COMPONENTS

The following sections describe, in general terms, the material and level of detail that should be included within a physical protection plan.

3.1 Introduction and Schedule for Implementation

This section should indicate the corporate name of the applicant, facility name, and facility location. The applicant should describe the type of facility operated and the general layout of the facility and the surrounding area. This section should include a map of the entire facility and other maps and illustrations, as appropriate. The applicant should indicate, on these maps, the

locations of physical protection systems, subsystems and major components; all material access areas; vital areas; vaults; entry/exit control points and alarm stations.

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

3.2 General Performance Objectives

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

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

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

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

(Regulatory References: §§73.20(a), and 73.20(b)(1),(2), and (3).)

3.3 Design Basis Threat

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

(Regulatory Reference: §73.1.)

3.4 Security Organization

3.4.1 Establishment of Security Organization

This section should describe whether the established security organization is proprietary or contract and, if contract, outline the written agreements between the licensee and contract guards force management.

(Regulatory Reference: §73.46(b)(1).)

3.4.2 Security Organization Management

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

This section should affirm that at least one full-time member of the security organization will be onsite at all times with the authority to direct the physical protection activities of the security organization. The plan should also affirm that written security procedures will be used and provisions for written approval of such procedures and any revision thereto are developed and used.

(Regulatory References: §§73.46(b)(2) and (3).)

3.4.3 Qualification for Employment in Security

This section should affirm that an approved Guard Force Training Plan, in accordance with Appendix B to Part 73, "General Criteria for Security Personnel," is in effect.

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

(Regulatory References: §§73.46(b)(4) and (5).)

3.4.4 Guard Force Training

Contingent upon affirmation that an approved Guard Force Training Plan is in effect (see Section 3.4.3, above), this section should additionally include a description of the qualification and requalification program for guards and Tactical Response Team (TRT) members in night firing with assigned weapons, and for TRT members only, a description of the training program in response tactics.

(Regulatory References: §§73.46(b)(4); 73.46(b)(7); 73.46(b)(8); and §II.E. to Appendix B to Part 73.)

3.4.5 Security Force Armament and Equipment

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

(Regulatory References: §§73.45(g)(3) and 73.46(b)(6).)

3.4.6 Force-on-Force Exercises

This section should describe how scenarios for force-on-force exercises are developed, design goals for conducting such exercises, and frequency of exercises. This section should affirm that the licensee will permit NRC to observe one force-on-force exercise each year and that the NRC will receive a 7-day notice of the exercise.

(Regulatory Reference: §73.46(b)(9).)

3.4.7 Records

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

- current security procedures until the Commission terminates the license for which these procedures were developed, and, if any portion of these procedures is superseded, retain the superseded material as a record for 3 years after the change.
- results of qualification and requalification for security force members, and retain the documentation as a record for 3 years after each qualification and requalification.
- results of weapons qualification and requalification for night firing, and retain as a record for 3 years after each qualification and requalification.
- completion of training in response tactics, by members of the Tactical Response Team and retain as a record for 3 years after the training is completed.
- results of Tactical Response Team and guard exercises and retain as a record for 3 years after each exercise is completed.

(Regulatory References: §§73.46(b)(3)(i); 73.46(b)(4); 73.46(b)(7); 73.46(b)(8); and 73.46(b)(9).)

3.5 Physical Barriers

3.5.1 General Layout

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

(Regulatory Reference: §73.46(c)(1).)

3.5.2 Protected Area Barriers

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

(Regulatory References: §§73.45(f)(1)(i); 73.46(c)(1) and (2).)

3.5.3 Vehicle Barriers

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

(Regulatory References: §§73.45(f)(1)(i) and 73.46(c)(1).)

3.5.4 Material Access Area Barriers

This section should discuss the level of physical hardening for the walls, floors, and ceilings of the different types of material access areas located at the site. The number, location, and type of entry/exit portals should be described. Methods used to provide hardening of the portal (during opened and closed conditions) should be described. Hardening of ventilation ducts or other openings should also be discussed.

(Regulatory References: §§73.45(b)(1)(i) and 73.46(c)(5)(iii).)

3.5.5 Security Posts and Structures

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

(Regulatory Reference: §73.46(d)(4)(i).)

3.5.6 Isolation Zones

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

(Regulatory Reference: §73.46(c)(3).)

3.5.7 Illumination

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

(Regulatory Reference: §73.46(c)(4).)

3.5.8 Storage of Strategic Special Nuclear Material

3.5.8.1 Vaults

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

(Regulatory Reference: §73.46(c)(5)(i).)

3.5.8.2 Tamper-Indicating Containers

This section should describe the construction and use of tamper-indicating containers in the storage of strategic special nuclear material.

(Regulatory Reference: §73.46(c)(5)(ii).)

3.5.8.3 Process Material Access Areas

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

(Regulatory References: §§73.46(c)(5)(iii) and (iv).)

3.5.9 Storage of Enriched Uranium Scrap

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

(Regulatory Reference: §73.46(c)(6).)

3.6 Access Control Subsystems and Procedures

3.6.1 Numbered Picture Badge Identification System

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

(Regulatory Reference: §73.46(d)(1).)

3.6.2 Access to Vital Areas, Material Access Areas, and Controlled Access Areas

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

(Regulatory References: §§73.45(b)(2) and 73.46(d)(2).)

3.6.3 Access Controls at the Protected Area

3.6.3.1 Personnel

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

(Regulatory References: §§73.45(f)(1) and (2); 73.46(d)(4)(i),(ii), and (iii).)

3.6.3.2 Hand-Carried Packages

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

(Regulatory References: §§73.45(f)(1) and (2); 73.46(d)(3) and (5).)

3.6.3.3 Delivered Packages

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

(Regulatory References: §§73.45(f)(1) and (2); 73.46(d)(3) and (6).)

3.6.3.4 Vehicles

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

(Regulatory References: §§73.45(f)(1) and (2); 73.46(d)(3); 73.46(d)(4)(i); 73.46(d)(7); and 73.46(d)(8).)

3.6.3.5 Designated Licensee Vehicle

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

(Regulatory Reference: §73.46(d)(8).)

3.6.4 Access Controls at Vital Areas, Material Access Areas, and Controlled Access Areas

3.6.4.1 Personnel

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

(Regulatory References: §§73.45(b)(2) and 73.46(d)(9).)

3.6.4.2 Material

This section should describe procedures for verifying material entry authorizations and procedures for verifying quantity and type of material. These descriptions should include the components to be used in the detection of unauthorized materials that are hand-carried by authorized individuals, or mailed or otherwise shipped, as part of an authorized shipment. Describe how normal conditions differ between regular working hours and nonworking hours (nights, weekends, and holidays).

(Regulatory References: §§73.45(b)(2) and 73.46(d)(9).)

3.6.4.3 Vehicles

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

(Regulatory References: §§73.45(b)(2); 73.46(d)(3) and (9).)

3.6.5 Material Access Area Exit Search of Contaminated Waste

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

(Regulatory References: §§73.46(d)(10) and (12).)

3.6.6 Shipment of Strategic Special Nuclear Material Offsite

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

(Regulatory References: §§73.46(d)(11) and (12).)

3.6.7 Escorts and Escorted Individuals

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

(Regulatory Reference: §73.46(d)(13).)

3.6.8 Keys, Locks, and Combinations

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

(Regulatory Reference: §73.46(d)(14).)

3.6.9 Records

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

(Regulatory References: §§73.46(d)(3),(10), and (13).)

3.7 Detection, Surveillance, and Alarm Subsystems

3.7.1 Isolation Zone Penetration

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

(Regulatory References: §§73.45(f)(1)(ii) and 73.46(e)(1).)

3.7.2 Emergency Exits

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

(Regulatory References: §§73.46(e)(2) and (5).)

3.7.3 Material Access Area/Vital Area Protection

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

(Regulatory References: §§73.45(b)(1)(ii) and 73.46(e)(3).)

3.7.4 Duress Alarms

This section should describe security stations and individuals (by job position) provided with duress alarms. The type of duress alarms used should be described.

(Regulatory Reference: §73.46(e)(4).)

3.7.5 Central and Secondary Alarm Stations

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

(Regulatory References: §§73.45(g)(5) and 73.46(e)(5).)

3.7.6 Power Sources

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

(Regulatory Reference: §73.46(e)(6).)

3.7.7 Component Supervision

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

(Regulatory Reference: §73.46(e)(7).)

3.7.8 External Protected Area Monitoring and Assessment

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

(Regulatory References: §§73.45(c) and 73.46(e)(8).)

3.7.9 Observation Methods within Material Access Areas

This section should describe methods used to observe individuals within material access areas, to ensure that strategic special nuclear material is not moved to unauthorized locations or moved in an unauthorized manner. The duration or periodicity of such monitoring should be described along with criteria used in defining authorized and unauthorized activities and conditions within the material access area. Methods for developing, maintaining, and distributing lists of authorized activities and conditions should be described.

(Regulatory Reference: §73.46(e)(9).)

3.8 Communications Subsystems

3.8.1 Security Force Communications

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

(Regulatory References: §§73.45(g)(4) and 73.46(f)(1).)

3.8.2 Alarm Station Communications

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

(Regulatory Reference: §73.46(f)(2).)

3.8.3 Power Sources

This section should describe methods used by the licensee to keep non-portable communications equipment controlled by the licensee and required by section 73.46(f) operable in the event of loss of normal power.

(Regulatory Reference: §73.46(f)(3).)

3.9 Test and Maintenance Program

3.9.1 Installation and Construction Tests

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

(Regulatory Reference: §73.46(g)(1).)

3.9.2 Pre-Operational Tests

This section should describe the testing and inspection program for: (1) intrusion alarms, (2) emergency exit alarms, (3) communications equipment, (4) physical barriers, and (5) other physical protection-related devices and equipment used pursuant to 10 CFR 73.46, within the pre-operational timeframe (after initial installation, but before full-time operation). This discussion should include the purpose for, and the intended level of, the testing and inspection program.

(Regulatory Reference: §73.46(g)(2).)

3.9.3 Operational Tests

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

(Regulatory References: §§73.46(g)(3); 73.46(g)(3)(i); and 46(g)(3)(ii).)

3.9.4 Preventative Maintenance Program

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

(Regulatory References: §§73.46(g)(4) and (5).)

3.9.5 Repairs and Maintenance

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

(Regulatory Reference: §73.46(g)(5).)

3.9.6 Reviews and Audits

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

(Regulatory Reference: §73.46(g)(6).)

3.10 Contingency Response Plan and Procedure

3.10.1 Contingency Plan Documentation

This section should commit the licensee to have an approved safeguards contingency plan for dealing with threats, thefts and radiological sabotage related to the strategic special nuclear material and nuclear facilities subject to 10 CFR 73.46. These plans should be developed in accordance with the criteria in Appendix C to Part 73 and should cover, but not necessarily be limited to, the response requirements of paragraphs (h)(2) through (h)(5) of 10 CFR 73.46.

(Regulatory References: §§73.45(g)(2) and 73.46(h)(1).)

3.10.2 Local Law Enforcement Agency Liaison

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

(Regulatory Reference: §73.46(h)(2).)

3.10.3 Tactical Response Force

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

(Regulatory Reference: §73.46(h)(3).)

3.10.4 Response Procedures

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

(Regulatory References: §§73.45(g)(1) and 73.46(h)(4).)

3.10.5 Use of Force

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

(Regulatory Reference: §73.46(h)(5).)

3.10.6 Protected Area Alarm Assessment

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

(Regulatory Reference: §73.46(h)(6).)

3.10.7 Unoccupied Vault/Material Access Area Alarm Assessment

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

(Regulatory Reference: §73.46(h)(7).)

3.10.8 Unoccupied Material Access Area (Alloyed/Encapsulated Strategic Special Nuclear Material) Alarm Assessment

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

(Regulatory Reference: §73.46(h)(8).)

3.10.9 Records

This section should describe how the licensee will establish, maintain and retain as a record the current safeguards contingency plan and also arrangements made with local law enforcement agencies.

(Regulatory References: §§73.46(h)(1) and (2).)

3.11 Authorized Placement and Movement of Strategic Special Nuclear Material within Material Access Areas

3.11.1 General

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

(Regulatory Reference: §73.46(d).)

2.11.2 Establishment of Authorized Placement and Movement of Strategic Special Nuclear Material

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

(Regulatory References: §73.45(d)(1)(i) and (iii).)

3.11.3 Establishment of Current Knowledge of Strategic Special Nuclear Material

This section should describe, for each material access area, the components to be used to verify the type, quantity, and location of strategic special nuclear material within the material access area. Procedures used to verify authorization schedules should be discussed.

(Regulatory References: §73.45(d)(1)(i) and (ii).)

3.11.4 Prevention of Unauthorized Placement and Movement of Strategic Special Nuclear Material

This section should describe the measures to be used to delay the unauthorized placement and movement of strategic special nuclear material within each material access area (e.g., the containment of strategic special nuclear material within wire cages, when the material is between the vault and process machinery).

(Regulatory References: §§73.45(c) and 73.45(d)(1)(iv).)

3.12 Removal of Strategic Special Nuclear Material through Material Access Area Portals

3.12.1 Development of Removal Authorization Procedures

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

(Regulatory References: §73.45(e)(2)(i) and (ii).)

3.12.2 Procedures and Controls for Strategic Special Nuclear Material Removal (Including Scrap and Waste)

This section should describe how the identification and authorization of each person presenting strategic special nuclear material for removal from a material access area are to be verified. The confirmation of verification of authorization, type, and quantity of strategic special nuclear material should also be described. Further, this section should discuss the components to be used to detect unauthorized removal of strategic special nuclear material. The components to be used to sense unauthorized attempts to remove strategic special

nuclear material from material access areas and to transmit sensor data to command and control should be discussed. Procedures and controls should be discussed for both normal conditions (including regular working hours and non-working hours) and emergency conditions. Procedures used to verify that an emergency condition exists should be described.

(Regulatory References: §73.45(e)(2)(i), (ii), and (iii).)

3.13 Compensatory Measures for Physical Protection Components (Appendix A)

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

3.14 Special Situations or Conditions Affecting Physical Protection (Appendix B)

This section should be used to discuss long-term, site-specific unique situations not covered by the main body of the Physical Protection Plan (e.g., decommissioning activities). (This section may be an appendix to the Physical Protection Plan, if desired by the applicant.)

4. LIST OF SELECTED PHYSICAL PROTECTION DOCUMENTS

- NUREG-1321, "Testing Standards for Physical Protection Systems at Category I Fuel Cycle Facilities."
- NUREG-1322, "Acceptance Criteria for the Evaluation of Category I Fuel Cycle Facility Physical Security Plans."
- NUREG-1328, "Entry/Exit Control at Fuel Fabrication Facilities Using or Possessing Formula Quantities of Strategic Special Nuclear Material."
- NUREG-1330, "Personnel and Vehicle Barriers at Fuel Fabrication Facilities Using or Possessing Formula Quantities of Strategic Special Nuclear Material."
- NUREG/CR-5081, "Tactical Exercise Planning Handbook."
- NUREG/CR-5172, "Tactical Training Reference Manual."
- NUREG/CR-5689, "Medical Screening Reference Manual for Security Force Personnel at Fuel Cycle Facilities Possessing Formula Quantities of Special Nuclear Material."
- NUREG/CR-5690, "Physical Fitness Training Reference Manual for Security Force Personnel at Fuel Cycle Facilities Possessing Formula Quantities of Special Nuclear Material."
- NUREG/CR-5721, "Video Systems for Alarm Assessment."
- NUREG/CR-5722, "Interior Intrusion Detection Systems."
- NUREG/CR-5723, "Security System Signal Supervision."

NRC FORM 336 (2-89) NRCM 1102 3201, 3202	U.S. NUCLEAR REGULATORY COMMISSION BIBLIOGRAPHIC DATA SHEET <i>(See instructions on the reverse.)</i>	1. REPORT NUMBER <i>(Assigned by NRC Add Vol., Supp. Rev., and Addendum Numbers, if any.)</i> NUREG-1456				
2. TITLE AND SUBTITLE An Alternative Format for Category 1 Fuel Cycle Facility Physical Protection Plans	3. DATE REPORT PUBLISHED	<table border="1"> <tr> <td>MONTH</td> <td>YEAR</td> </tr> <tr> <td>June</td> <td>1992</td> </tr> </table>	MONTH	YEAR	June	1992
MONTH	YEAR					
June	1992					
5. AUTHOR(S) P.A. Dwyer	4. FIN OR GRANT NUMBER	6. TYPE OF REPORT Technical				
8. PERFORMING ORGANIZATION - NAME AND ADDRESS <i>(If NRC, provide Division, Office or Region, U.S. Nuclear Regulatory Commission, and mailing address; if contractor, provide name and mailing address.)</i> Division of Safeguards and Transportation Office of Nuclear Material Safety and Safeguards U.S. Nuclear Regulatory Commission Washington, D.C. 20555	7. PERIOD COVERED <i>(Include Dates)</i> N/A	9. SPONSORING ORGANIZATION - NAME AND ADDRESS <i>(If NRC, type "Same as above"; if contractor, provide NRC Division, Office or Region, U.S. Nuclear Regulatory Commission, and mailing address.)</i> Same as above				
10. SUPPLEMENTARY NOTES						
11. ABSTRACT <i>(200 words or less)</i> This document provides an alternative format for physical protection plans designed to meet the requirements of Title 10 of the Code of Federal Regulations, Sections 73.20, 73.45, and 73.46. These requirements apply to licensees who operate Category 1 fuel cycle facilities. Such licensees are authorized to use or possess a formula quantity of strategic special nuclear material. The format described is an alternative to that found under Regulatory Guide 5.52, Rev. 2, "Standard Format and Content of a Licensee Physical Protection Plan for Strategic Special Nuclear Material at Fixed Sites (Other than Nuclear Power Plants)." 						
12. KEY WORDS/DESCRIPTORS <i>(Use words or phrases that will assist researchers in locating the report.)</i> Category 1 physical protection physical protection plan safeguards security	13. AVAILABILITY STATEMENT Unlimited	14. SECURITY CLASSIFICATION <i>(This Page)</i> Unclassified				
	<i>(This Page)</i> Unclassified	<i>(This Report)</i> Unclassified				
	15. NUMBER OF PAGES					
	16. PRICE					

THIS DOCUMENT WAS PRINTED USING RECYCLED PAPER

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