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Eugene W. Richard, Safeguards Resear	rch Branch, SAFER:RES		
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This document was prepared primarily for preliminary or internal use. It has not received full review and approval. Since there may be substantive changes, this document should not be considered final.

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Prepared for U.S. Nuclear Regulatory Commission Washington, D.C. 20555

NRC FIN No. A0143

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NRC Research and Technical Assistance Report 7911020 INTERIM REPORT

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LAWRENCE LIVERMORE LABORATORY

August 8, 1979 PP 069-79

1262 073

Mr. Eugene W. Richard Office of Nuclear Regulatory Research Operational Support Branch U. S. Nuclear Regulatory Commission Washington D. C., 20555

Dear Gene:

This is our Monthly Progress Report for July, 1979 on <u>Inspection Methods for</u> Physical Protection, NRC FIN A0143.

1.0 PREPARATION FOR THE IMPP/NRC SEMINAR AND FORUM

1.1 LLL/SRI Preparation Meetings

LLL and SRI met on July 6, 1979 to chart their preparations for the seminar and forum that was held in Livermore, CA, on July 26 and 27, 1979. We met again on July 24 to review each other's presentations so that we could present an orderly flow of information without unnecessary duplication.

1.2 Program Impact

At least 50% of the man-hours expended in the month of July on the IMPP project were devoted directly to preparation for the seminar and for the project review meeting held on July 25, 1979.

2.0 IMPP/NRC PROJECT REVIEW MEETING, SEMINAR AND FORUM

2.1 Issues and Discussions

The issues and disucussions from this meeting are attached to this report as Appendix A. This appendix also contains a list of the attendees.

2.2 Conclusions

The attendees rated the meeting as a success. RES, IE Headquarters and Region people were presented with the issues uncovered in the IMPP data acquisition phase, and the IMPP team gained valuable feedback from all the NRC attendees.

NRC Research and Technical

University of California P.O.Box 808 Livermore California 94550 D Telephone (415) 447 1100 D Twx 910-386-8339 AEC LLL LVMR

E. W. Richard

3.0 A & O PROCEDURES PROGRESS

3.1 Study of Relationships Among Procedures and Regulations

At the request of E. Richard, we studied the relationship among the physical protection procedures and regulations. The result of this study is attached as Appendix B. Approximately 80 engineering man-hours were expended on this study.

3.2 A & O Procedures Feasibility Study

We are nearly finished with a first draft of this work, and expect to send a check-print to RES near the end of September.

4.0 IE INSPECTION MODULE STUDY

In order to determine if a generic approach to inspection module design was feasible, we studied the modules for power reactors (81100 series), fuel cycle (81200 series), transportation (81300 series), and non-power reactors (81400 series) to see if there were any common elements, or correspondence, between the modules for the facility types. We also extracted all citations of the regulations, regulatory guides, etc. The results of this study are presented in tabular form in Appendix C.

5.0 SITE SPECIFIC PHYSICAL EQUIPMENT SURVEY

5.1 Survey Permission Granted

At the seminar and forum, IE and RES gave the IMPP team permission to conduct the physical protection equipment survey of power and non-power reactors. Because neither RES nor IE Headquarters could provide us with the name and cor ect title of the security contact or the exact address of these facilities, the IMPP team separated the facilities by NRC Region and requested that our Region contacts provide us with the needed information. When this information is returned to us, we will compile the site contact and address lists, and will send copies to the Regions and to NRC Washington.

5.2 Zion Test Survey

To date, we have not received the results of a promised test-run of our site-specific physical protection equipment survey questionnaire at the Zion Station of the Commonwealth Edison Co., Zion, IL.

As requested, we sent to your office, on July 5, 1979, a sample letter for Jay Durst's signature requesting that Commonwealth Edison Co. release the completed survey to us.

E. W. Richard

6.0 INMM CONFERENCE

During the week of July 15, three members of the IMPP team traveled to Albuquerque, N. M. to attend the Institute of Nuclear Materials Management (INMM) conference.

The theme of the 20th annual meeting this year was <u>International</u> Safeguards.

We attended the plenary sessions and all of the concurrent sessions of interest to the IMPP project.

Some of the more interesting papers were:

- Aspects of Accountability and Physical Security.
- Anti-Nuclear Demonstration Planning.
- Domestic Safeguards in the Nuclear Industry.
- Physical Protection of Power Reactors.

These four papers were covered in the session <u>Safeguard Concerns of</u> <u>Utilities</u>. All except the last were presented by members of the utility companies.

Other items of interest included the viewing of two movies, one on LLL's <u>Operation Morning Light</u>, and the other on Rockey Flats anti-nuclear demonstrations.

During the plenary session on Tuesday, an interesting paper was presented on the topic <u>International Safeguards Inspector: A Profession With a</u> <u>Future?</u> This paper covered a typical international safeguards inspector's education, vital statistics, salary, and other items which gave an excellent picture of the inspector engaged in safeguard evaluations in the International Atomic Energy Agency (IAEA) community.

7.0 EXPENDITURES

- 7.1 LLL estimated expenditures for July 1979: \$32.3K
- 7.2 Subcontractor estimated expenditures for July 1979: \$ 16.3K

E. W. Richard

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7.3 IMPP Expenditures to date: \$196K.



Sincerely,

A. W. Olson NRC Physical Protection Project

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Attachments

Distribution:

P.P. Distribution Lists 1 thru 4 W. Martin, Region I D. Hansen, SAI G. Tomlin, RES

APPENDIX A IMPP/NRC PROJECT REVIEW MEETING, SEMINAR AND FORUM ISSUES AND DIJCUSSIONS

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JULY, 1979

IMPP/NRC PROJECT REVIEW MEETING,

SEMINAR AND FORUM

ISSUES AND DISCUSSIONS

JULY 1979

This is a compilation of the issues discussed at the Project Review Meeting of July 25, 1979, and at the Seminar and Forum of July 26 and 27, 1979, in Livermore, California. This is not intended to be a transcript of these meetings, rather it presents the major issues discussed, and the major decisions resulting from the discussions.

The participants in these discussions were:

NRC

R. Caldwell, Region IV O. Chambers, I&E D. Chapell, I&E J. Donahue, Region III L. Ivey, Region V W. Martin, Region I E. Richard, RES

G. Tomlin, RES

IMPP

R. Bradley, LLL D. Hansen, SAI J. Ketchel, SRI A. Olson, LLL D. Richardson, SRI F. Rogue, LLL J. Savage, LLL S. Scala, SRI

1.0 CUTOFF POINT FOR DELIVERABLES

- 1.1 <u>Issue:</u> We have made an extensive study of regulations through the 10 CFR "upgrade rule." We need a cutoff point of acknowledging changes in regulations, etc., for our deliverables.
- 1.2 Discussions: We suggested that the 10 CFR "upgrade rule" be the starting point for deliverables. Don Chapell stated that things are in such a flux regarding regulations that it would be best that headquarters make a decision for us as to the cutoff point when appropriate. Bob Bradley mentioned that LLL's use of word processors for all of our deliverables manuscripts would allow rapid changes right up to printing time.

2.0 DOCUMENTATION PROBLEMS

2.1 <u>Issue</u>: Tracking regulations, regulatory guides, standards, etc., through the inspection process has been no easy chore. Each step has new surprises. We don't know what NRC documentation exists, how to get needed documents for our library, or whether or not we have the latest version avaiable.

2.2 Discussion: Don Chapell said that there are many things going on with regulations and other NRC documents that we are not aware of, and that he will see to it that we get all pertinent information that comes across his desk. He would like a stack of pre-addressed gum labels from LLL so he could expedite information output to us. We will get a comprehensive list of proposed changes or new regulations from Owen Chambers.

Owen will also be our contact for requesting needed documents from the NRC Document Center.

3.0 TURNAROUND TIME

- 3.1 <u>Issue</u>: Things just take too long getting through the NRC headquarters review and critique process.
- 3.2 Discussion: In order to speed-up the review and critique process, action memos with due dates were suggested by Gene Richard. Gene also suggested that items for review be sent to RES and I&E simultaneously, so that reviews can be made in parallel, rather than serially.

4.0 SITE-SPECIFIC PHYSICAL PROTECTION EQUIPMENT SURVEY

- 4.1 <u>Issue</u>: The physical protection profiles were to become the common denominators of site systems, to give us a handle on common equipment in use, and to assist us in developing a commonality of inspection methods. We need to proceed with the survey which will give us site-specific equipment usage information.
- 4.2 <u>Discussions</u>: LLL can proceed with the survey of power reactors and non-power reactors immediately. Until security questions presently being addressed are solved, LLL will not be allowed to survey fixed site/fuel cycle facilities.

5.0 OBSERVATION OF INSPECTIONS

- 5.1 <u>Issue</u>: LLL has observed three inspections and has made three non-inspection facility visits. We have gained knowledge about various facilities and have been exposed to the inspection process. However, our subcontractors have not participated in any inspections. We need to observe several more inspections for both LLL and subcontractor familiarization. We requested that two people at a time be allowed to observe future inspections at least at two power reactors, one non-power reactor, and one fuel cycle facility.
- 5.2 Discussion: Don Chapell will try to meet this request, but he wants such observation visits completed before October. He has asked the Region contacts for their inspection schedules. Two IMPP people at a time may not be possible at each observed inspection, but he will permit two where inspection circumstances allow it. 1262 079

6.0 CONTACT WITH PHYSICAL PROTECTION INSPECTORS

- 6.1 <u>Issue</u>: As far as an understanding of inspector needs and levels of expertise, our contacts with inspectors has been insufficient. We don't feel that the sample of inspectors we have worked with are truly representative of the inspector corps. We have met and talked with some of IE's top people, but we feel a need to have discussions with some of the junior people to learn more about their needs also. We would like permission to arrange non-inspection meetings at the Regions for talks with all levels of PP inspectors.
- 6.2 <u>Discussion</u>: Don Chapell agreed to our arranging such Region meetings, at the Region's convience.

7.0 TECHNICAL SOPHISTICATION OF P.P. INSPECTORS

7.1 <u>Issue:</u> From IMPP observations, inspectors tend to feel unsure when technically challenged by licensee personnel. Inspectors want more detailed technical guidance. The seasoned inspector has a limited technical background and the interns have little or none. We need to review the present IE training program and hiring prerequisites in order to understand the level of technical sophistication common to all inspectors.

7.2 Discussion:

Don Chapell will make training information and the hiring prerequisites available to us, and will try to schedule a project team member into the IE training being held during the latter part of August.

8.0 SEMANTICS

- 8.1 <u>Issue:</u> The project team has been troubled by the varied usages within the NRC of the terms compliance, evaluation and assessment.
- 8.2 Discussion: The following definitions were proposed by Gene Richard, modified by Don Chapell and Bob Bradley and accepted by all.
 - 8.2.1 Definition: IE Physical Security Compliance Inspection A Physical Security Compliance Inspection is defined as an evaluation of licensed nuclear facilities or transportation activities to determine if they are operated and conducted in compliance with NRC Regulations, the licensee's approved physical security plan, contingency plan, guard training and qualification plan, and any licensee procedures that support these plans.

- 8.2.2 Definition: IE Physical Security Field Assessment of Adequacy A Physical Security Field Assessment of Adequacy is defined as an evaluation of the effectiveness of a licensee-implemented physical security system to protect against the design-basis threat.
- 8.2.3 IE is still unsure how they are going to increase staff to conduct field assessments of adequacy. They are looking to the IMPP project for recommendations. At present, they are looking at items of noncompliance to make a determination of adequacy. A method for handling this activity is being discussed at Region V during the week of July 30. We will be given the concensus methodology to study. One method is suggested in Section 10 and Paragraph 10.2.2.

9.0 REDIRECTION OF DELIVERABLES

- 9.1 <u>Issue</u>: A redirection memo from IE Headquarters has reoriented our priorities. Emphasis has shifted from the several deliverables called for in the Schedule 189 and the NRC SOW to a replacement for the 81xxx series of power reactor inspection modules. The elements represented in the previous set of deliverables will become integral parts of the new inspection modules. These new modules will be referred to as <u>Inspection Methods for Physical Protection of Power</u> Reactors.
- 9.2 Discussion:
 - 9.2.1 This redirection is in line with IMPP team thinking, and the concensus opinion was that it is the most logical path for this project. Contractually, LLL will require a Form 173 to show the changes caused by this redirection. Owen Chambers directed LLL to submit an ammended Schedule 189 to reflect these changes.
 - 9.2.2 The project team should concentrate its efforts on a replacement for the 81100 series inspection modules governed by 10 CFR 73.55. The Detection Aid and Access Control modules will be attacked first, as they are among the most difficult, and a menu of formats will be developed so that the most useful and usable elements can be discovered and adopted as the model.

10.0 DELIVERABLES DESIGN--FORMAT I

10.1 <u>Issue:</u> Pre- and post-inspection modules will be needed for inspector guidance. What should they contain?

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10.2 Discussion:

- 10.2.1 The pre-inspection module should give the inspector guidance on all steps necessary in overall pre-inspection planning. Many inspectors have developed their own pre-inspection guides, and these may be helpful to the project.
- 10.2.2 The post-inspection module should give the inspector guidance on his review of the inspection just completed. It should also contain guidance for making an assessment of the adquacy of the licensee's physical protection system within the definition shown in Paragraph 8.2.2.

11.0 DELIVERABLES DESIGN--FORMAT II

- 11.1 <u>Issue</u>: What major elements should be incorporated in the revised inspection modules?
- 11.2 Discussion: Several existing LLL/SRI models will be examined by IE Headquarters and Region contacts, and comments will be forthcoming. A concensus of attendees is that the necessary elements would be at least the following:
 - Section I Inspection Objectives (Similar to the existing sections.)
 - Section II Inspection Requirements

 (Citation of the applicable regulations, and the requirements
 of those regulations as applied to the element being
 inspected.)
 - Section III inspection Methods (Techniques and procedures for inspecting to the requirements given in Section II. This guidance is for post-acceptance inspections.)
 - Section IV Initial Acceptance Inspection Methods (Expanded techniques and procedures for the initial acceptance inspection to the requirements given in Section II. Probably should contain guidance for adequacy assessment of the new element.)
 - Section V Scheduling, Manpower and Equipment Requirements (Schedules-announced or unannounced, frequency of inspection, percent of module to be completed per inspection visit, manpower required, man-hours required, minimum training required for module completion, test equipment needed, etc.)

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Section VI - Applicable Regulations and References (The cited regulation paragraphs from Section II, with all regulation cross-references, will be included. Applicable paragraphs from a.l other reference documents cited in the module will also be included here.)

Note: The above sections will be included in all modules. The following sections will only be included as applicable to equipment-oriented inspection modules.

- Section VII Technical Considerations
 (Technical considerations are for inspector information only, to give him background for some of the decisions he may have to make.)
- Section VIII Environmental and Adversary Considerations (Generic effects of environment and adversary action on detection and FAR, presented in tabular format.)

12.0 DELIVERABLES DESIGN--FORMAT III

- 12.1 <u>Issue:</u> Should the inspection of physical protection equipment be by functional testing or by definitive measurement testing?
- 12.2 <u>Discussion</u>: Functional testing is desired, except in the area of lighting which requires the only definitive measurement called for in the regulations. However, IMPP may find areas where definitive testing may be more desirable.

13.0 DELIVERABLES DESIGN--FORMAT IV

- 13.1 <u>Issue</u>: Should we include check-lists and sign-off sheets in each module?
- 13.2 Discussion: Walt Martin and Jim Donande both agreed that check-lists would not be used by the inspector in the field, and both recommended against their use. Both agreed that module sign-off sheets were wanted.

14.0 DELIVERABLES OLSIGN -- TRAINING

14.1 <u>Issue:</u> LLL will provide inspector training in the use of the documentation provided, and for the procedures and test equipment recommended. Should this training be designed for centralized classroom use, or should it be designed for portability (one to ten inspectors and independent study)?

14.2 Discussion: Don Chapell and the Region participants agreed that the training should allow for small group independent study at the Region offices for the inspectors already in the field, but this training will also be incorporated into the headquarters training of the new physical protection inspectors. Our training must be usable in both cases. Present formal IE training consists of 35 hours in administration, detection, regulations, etc.

15.0 MISCELLANEOUS COMMENTS

15.1 Don Chapell

- 15.1.1 Inspections will be primarily for compliance, but secondarily for adequacy assessment.
- 15.1.2 Owen Chambers will be the project team's <u>direct pipeline</u> contact to IE Headquarters. Don will act as contact when Owen is unavailable.
- 15.1.3 We should consider 10 CFR Parts 72, 75, 110, and 150, as well as the new Part 73.47 Category II and III as inputs for our deliverables.
- 15.1.4 IE Headquarters has detailed reports on metal and contraband detector testing, and he will make them available to us.
- 15.1.5 IE cannot exercise the licensee's physical protection system against threat scenarios.
- 15.1.6 Backup power systems should be exercised for many hours to demonstrate the backup capability. Battery powered systems are particularly vulnerable to capacity losses which are undetectable by the normal means of measurement such as electrolyte density.
- 15.1.7 IE, RES and the project team should meet monthly during the format development phase of the deliverable design. The next management meeting is tentatively set for the first week of September, 1979.
- 15.1.8 IE had considered a generic approach to the inspection modules in the past which were somewhat similar to the LLL Model III shown in the seminar handouts. This may be a feasible approach in the long haul, but the project should concentrate on the power reactor modules at this time.
- 15.1.9 LASL and MERADCOM have produced reports on instruments and test kits for inspectors.

15.2 Owen Chambers

- 15.2.1 The licensee's people should demonstrate compliance to the inspector. Generally, the inspector should not exercise licensee equipment, and definitely he should not open equipment enclosures or junction boxes, or handle any components within them.
- 15.2.2 LLL should get the microfiche library that is indexed in Volume II of the UGR Guidance Compendium.
- 15.2.3 Kenneth Gray of the Civil Engineering Laboratory at Port Hueneme, CA. has compiled a list of documents on physical security equipment.
- 15.3 Wait Martin/Jim Donahue
 - 15.3.1 Provide an inspection module that gives the inspector a general overview of the licensee's physical protection system before the beginning of the detailed inspection.
 - 15.3.2 The vital areas should be 100% inspected on every inspection visit.
 - 15.3.3 Computer interfacing cabinets and junction boxes should be inspected for tamper switches and line supervision. Supervision should alarm when any physical protection system interface modules or boards are removed from the system.
 - 15.3.4 All physical protection systems should be checked for tamper indication and line supervision in both the alarm and access modes.
 - 15.3.5 If the false alarm rate records show an abnormally low FAR, check the system for lowered sensitivity.
 - 15.3.6 Licensee's should be required to retain records for a longer period. Much can be determined about past system performance by examining the records.

15.4 Ron Caldwell

- 15.4.1 IMPP should address, under assessment of adequacy, the problem of the attitude of the licensees. Some of them provide only the barest minimum in equipment and procedures.
- 15.5 Duncan Hansen
 - 15.5.1 The Guard T&Q Plan Acceptance Evaluation Guide for NRR is NUREG 0576.

APPENDIX B

1. 11

RELATIONSHIPS AMONG PROCEDURES AND REGULATIONS

RELATIONSHIPS AMONG PROCEDURES AND REGULATIONS

The prest t'regulations governing the procedures upon which domestic Safeguard system compliance is based are inter-related and are stated in 10 CFR 50, 70, and 73:

Licensing Requirements (Production and Utilization Facilities)

- 10 CFR 50.34 (a) Preliminary Plans for Emergencies
 - (b) Final Plans for Emergencies(c) Physical Security Plan

 - (d) Safeguards Contingency Plan
 - Appendix E. IV Emergency Plan

Licensing Requirements (SNM)

- 10 CFR 70.22 (g) (1) Physical Protection (in transit) .
 - (2) Safeguards Contingency Plans (in transit)
 - Physical Security Plan (fixed site) (h)
 - (i) Emergency Plans
 - (j) Safeguards Contingency Plan (fixed site)

Physical Protection Requirements (Plants and Materials)

- General Requirements SNM (in transit) 10 CFR 73.30
 - Plan of Protection Procedures 10 CFR 73.30 thru .30 (e) 73.36 (in transit)
 - .40 Physical Protection - General Requirements for Fixed Sites
 - .40 (a) Physical Protection Security Plan
 - .40 (b) Safeguards Contingency Plan
 - Physical Protection Licensed Activity . 50
 - .50 (a) (4) Security Personnel in accord with Appendix B
 - .50 (g) Responses - in accord with Appendix C
 - Physical Protection Nuclear Power Reactors .55
 - (4) Security Personnel in accord with Appendix B .55 (b)
 - (1) Responses in accord with Appendix C .55 (h)
 - Physical Protection Additional Requirements for .60 SNM (fixed site)
 - Appendix B General Criteria-Security Personnel
 - Appendix C Licensee Safeguards Contingency Plans

Note that each plan required depends on procedures for its execution.

The inter-relationships among the regulations can be represented by Tables I and II.

Physical Protection	Licensing Requirements							
Requirements	10 CFR 5	0. 34			10	CFR	70.2	2
10 CFR 73	(a)(10)	(b)(6)(v)	(c) (d)	Appendix E IV	(g)	(h)	(i)	(j)
.30 through .36	T		X			X		
.40	1.00		x			x		
.50	100 million (* 1910)		x			x		
.55	1.11		×		1.	×		
.60			x			×		
Appendix B	1		x		X	x	x	
Appendix C		and a state of the	x	K X	X	x	X	X
10 CFR 50 Appendix E	X	X						

TABLE I. Inter-relationships Among Regulations

TABLE II - Inter-relationships Among Regulations

Physical Protection	Physical Requir 10 C	Protection ements FR 73	Licensing Requirements		
Requirements 10 CFR 73	Appendix B	Appendix C	10 CFR 70 .22	10 CFR 50 .34	
.30 (d)	X		x	x	
(e)	x		x	x	
(q) (1)		x	x	x	
.40 (a)			x	x	
(b)		x	x	x	
.50 (a) (4)	×		X	x	
(g) (1)		x	x	x	
.55 (b) (4)	x			x	
(h) (1)		x		x	
.60	X		x	x	

The (x) means that references are made between regulations, or that one is supported by the other.

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The <u>licensing requirements</u> are the basis upon which the physical protection system is constituted. The plant physical protection system, as licensed and subsequently modified, is the reference for compliance and adequacy inspection and enforcement activity. The present situation is one of change, in that current effective regulations are in the process of being supplemented by new regulations whose compliance dates are many months away, but for which licensees are beginning to make plans. Figure 1 is a representation of the status of the physical protection situation in the midst of the changes which are taking place.

The <u>physical protection requirements</u> outline the details of the safeguard system required to adequately comply with license requirements which may vary from facilty to facility. Compliance requires the establishment and documentation of safeguard system procedures which the licensee will execute in response to indications of abnormal situations, any of which may potentially be of adversary origin. There will also exist support procedures necessary to maintain the safeguards system in the required state of readiness and competency to respond when needed.

The safeguard system procedures can be classified into categories:

- Routine Procedures
- Contingency Procedures

A further sub classification of each procedure category can be made into two types:

- Administrative Procedures
- Operational Procedures

Each of these will be discussed in more detail.

10 CFR 50.34 (License Conditions, Facilities)

This part requires the submission, for approval, of a Physical Security Plan which demonstrates how the applicant plans to comply with 10 CFR 73, and the tests, inspections and other means he will use to demonstrate compliance. It also requires the submission of an emergency plan in accord with 10 CFR 50 Appendix E and a contingency plan which is in accordance with the criteria set forth in 10 CFR 73 Appendix C.

Compliance will be assured through the execution of documented procedures by plant personnel and security forces in conjunction with LLEA, which will be inspected and evaluated by I&E for compliance and adequacy.

10 CFR 50, Appendix E, IV Procedures

These procedures are provided to comply with requirements for an organization to cope with radiation emergencies, including evacuations, public warnings and notifications, on-site and off-site medical treatment, determining magnitude of release, peronnel monitoring, decontamination, transportation, employee training, testing and drills, and reentry. Security personnel and procedures will be intimately related to these emergency procedures.



Figu Physical Protection Safeguard System Status

*Near Future - Regs in effect, but not all implementation dates have passed. **Far Future - Regs which will be in effect after proposed upgrade rulemaking has become effective.

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10 CFR 70.22 (License Conditions, SNM)

This part requires the submission, for approval, of a physical protection plan for in-transit protection of SNM which is in accord with the requirments of 10 CFR 73.30 through 73.36. It also requires a contingency plan which is in accordance with 10 CFR 73 Appendix C.

For fixed sites, a physical security plan is required which is in accordance with 10 CFR 73. This plan shall demonstrate how the applicant intends to comply, and what tests, inspections and other means he will use to demonstrate compliance. It also requires a plan for coping with emergencies, as required by 10 CFR 50 Appendix E, IV.

Compliance will be assured through the execution of documented procedures by plant personnel and security forces, in conjunction with LLEA, which will be inspected and evaluated by I&E for compliance and adequacy.

10 CFR 73.30 through .36, .40, .50, .55, .60 (Physical Protection requirements)

The procedures instituted by these requirements (to assure compliance with these regulations) are the fundamental basis for safeguard system physical protection against, threat, theft and sabotage. The requirements include protection for fixed sites and in-transit materials, and call for compliance with 10 CFR 73 Appendix B and Appendix C, as appropriate.

10 CFR 73, Appendix B Procedures

These procedures are intended to assure a protective capability which complies with detailed criteria for security personnel outlined in 10 CFR 73, Appendix B, and which is more complete than previous requirements. This improved capability for routine operations will carry over into security force execution of contingency plan operations.

10 CFR 73, Appendix C Procedures

Since the prime purpose of a safeguard system is to protect against threats, theft or sabotage, there has always been some consideration given to contingency response by the safeguard system. Appendix C is a formal recognition that for optiumum protection, detailed approved planning and documentation is required prior to the contingency so that the need for ad-hoc or real time decisions under stress is minimized.

Routine and Contingency Procedures

<u>Routine procedures</u> are those which are exercised during normal day-to-day operations. Routine procedures include administrative and operational categories.

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<u>Contingency procedures</u> (Appendix C) are those which are exercised during abnormal situations, which include adversary actions, emergencies*, acts of nature (storm, earthquake, etc.) and combinations of these. Contingency procedures are operational only, since they will be exercised only during an actual contingency. However, preparations for, and support of, the safeguards systems prior to exercise during a contingency will have included the exercise of both administration and operational procedures oriented toward the contingency plan.

Administrative and Operational Procedures

Administrative procedures include the origination and documentation of what is to be done, who is to do it, and how it is to be done (responsiblity matrix assignments). In other words, the writing of the operational procedures. They would also include system design, "outfitting" (procurment, installation, test, acceptance), hiring, training, clearance, maintenance and repair scheduling, upgrading, qualification and re-qualification, LLEA liaison, authorization and approvals (access, material movement), determination of performance effectiveness (for purposes of predicting probability of successful execution of operational procedures) badging, key, lock, combination/code control, etc.

Operational procedures are those procedures which will be followed by guards, operators and armed response individuals in day-to-day patrols, surveillance, search, identifications, access, contraband and entry control, alarm assessments, selection of appropriate responses to alarms and emergencies, communications, cooperation with LLEA, procedural modifications due to special conditions, verifications of operability and availability of barriers, alarms, utilities, equipment, advisory neutralization, etc.

In more general terms, the operational procedures are the procedures exercised to protect the facility against threat, theft, and sabatoge, while the administrative procedures are the planning and supporting procedures which are related to the operational procedures. Examples of each are listed in Table III.

*Emergencies, in this context, include fire, riot, accidents loss of utilities, strikes, etc., in addition to the radiation emergencies described in 10 CFR 50, Appendix E IV. Any of them can influence safeguard system response to an adversary action and must be planned for in advance.

Administrative Procedures	Operational Procedures
Writing of Operational Procedures	Execution of Operational
Hiring	Procedures
Clearance	Patrol
Training	Surveillance - All Aspects
Qualification	Search Execution
Re-qualification	Identity Execution
Badging	Access Control
Identification Policy	Entry Control
Key Control	Alarm Assessment
Code/Combination Control	Selection of Appropriate Response
Lock Control	Response to Alarm
Search Policy	Response to Emergency
LLEA Liaison	Communication Execution
Responsibility Matrix Assignments	Cooperation with LLEA
Procurement Specifications and	Modifications due to Special
Guidance	Conditions
Inspection Test, Acceptance,	Change of Shift
Installation Guidance	Verification of Availability &
Routine Maintenance Scheduling	Operability
Non-Routine Maintenance Scheduling	Equipment
System Design and Upgrade	Barriers
Procedures	Alarms
Approval/Authorization Policy	Utilities
Access to PA, VA, MAA, Vaults	Contraband Detection
Material Movements	
Emergency Response Policy	
Communication Policy	
Determination of Performance	
(for purposes of predicting	
probability of successful	
execution)	
False Alarm	
Guard Effectiveness	
Failure Rates	
Barrier Integrity	

TABLE # - A Representative List of Procedures

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APPENDIX C

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PHYSICAL PROTECTION INSPECTION MODULE CITATIONS

AREAS OF CORRESPONDENCE AND DIVERGENCE

Physical Protection Inspection Module Citations

Areas of Correspondence

Power Reactor	·	fixed Site/Fuel Cycle	Non-Power/Research Reactor		
1121 Security Plan 50.34(c), 50.54(p), 73.40 73.55(a) thru (h)	0,		81405 Se arity Plan 50.34(c), 50.54(c)(p)(q), 73.6(b), 73.40, 73.50(b)(1), 73.60		
1125 Security Organization 73.55(a)(b) RG 5 ANSI 18.17	.20 81210	Security Organization 73.50(a) RG 5.20	B1415 Security Organization 73.50(a) ANSI 18.1		
127 Physical Barriers (PA) 73.2(f) 73.5 SPER Chapt 3	55(c)(d) 81215	Physical Barriers 73.2(b)(f)(n) 73.50(b)			
1129 Physical Barriers (VA) 73.55(c)(d)(e Rev Guideln 13, 17	SPER th 5,6	Mu 3.12			
1133 Access Control (ID, Auth, Badging) 73. SPER Sect 3.2, 5.3 Rev Guidin	55(a)(d) 81220 1.5	Access Control 73.50(c)(e) 73.60(b) RG 5.7, 5.12	81420 Access Control 73.50(c) MIS 3.2		
1135 Access Control (Search) 73.55(a)(d SPER (App. B) Rev Guidin	3,4,15,20	a state of the second			
1137 Access Control (Escorting) 73.55(d) SPER Sect 4.5, 6.3.3 Rev Guidin	2,5				
1139 Access Control (Vital Area) 73.55(a)(d SPER Chapt 5 Rev Guidin	6,11,17				
1143 Detection Aids 73.55(a)(c)(d)(e) Fed Spec W-A-0045018 MiREG 0320 RG 5	.44 81230	Detection Aids 73.5%(c)(d)(e) Fed Spec W-A-00450 TI 9000 App C			
147 Communications 73.55(a)(f) SPER Sec 3.2.1.7, 3.2.2.6, 5.3.1.7, 5. SPER Chapt 7	3.2.6, 6.1.5	Central Alarm & Communications System 73.50(e)	81435 Communications 73.50(e)		
1141 Alarm Stations 73.55(a)(e)(f)(h) CAS,SAS) SPER Chapt 6 Rev Guidin	16		81425 Alarm Systems NO REG CITED No RG or Rev Guidl Cited		
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Physical Protection Inspection Module Citations

Areas of Correspondence

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Power Reactor	Fixed Site/Fuel Cycle	Mon-Power/Research Reactor
81149 Testing and Maintenance 73.55(a)(g) SPER Chapt 12 RG 5.44 Rev Guidin 3,4	81245 Testing and Maintenance 73.50(f) RG 5.7	
81155 Reponse 73.55(a)(h) SPET Sect 1.5, Chapt 8, App A Rev Guidin 12,19	81235 Response Controls 73.50(g)	
81157 Locks, Keys & Combinations 73.55(a)(d) SPER Chapt 3,5 RG 5.12 Rev Guidin 7,14 MIL-P-43607D MIL-2-29151	81225 Locks, Keys & Combinations 73.2(m) 73.50(c) RG 5.12	81430 Loc.s, Keys & Combinations 73.2 RG 5 12
81159 Records and Reports 73.55(b)(d)(h) 73.70	B125/i Records and Reports 73.70	
	81250 SMM Protection 73.60(a)(c)(d) . RG 5.7, 5.12	81410 Protection of SMM 73.1(b) 73.2(a) 73.6(a)(b) 73.40 73.50 73.60
POOR ORIGINAL		
1262 096		

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Physical Protection Inspection Module Citations

Areas of Divergence

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Power Reactor	Fixed Site/Fuel Cycle	Non-Power/Research Reactor	Transportation
123 Security Program Audit 73.55(a)	81260 Report of Incidents 70.32(e) 73.71(a)(b)	81440 Surveillance NO CITATIONS	81300 In-Transit Physical Protection 70.22, 70.32, 70.30 thru 70.36, 73.70, 73.72
131 Lighting 73.55(c) AMSI A-85.1 SPER Chapt 4 Sect 4.3		81445 Procedures 73.50(a) ANSI N 18.7-73 Sect 4.2.1	
45 Assessment Alds 73.55(a)(c)(h) SPER Sect 3.1.3, 4.3, 6.1.3, 6.3.1		81150 Security Program Review 50.54(p)	
151 Compensatory Measures 73.55(a)(g) (App C) Rev Guidin 9, 10, 13		Sabotage 10 CFR 100	
153 Power Supply 73.55(a) SPER Sect 3.1.4, 5.2.2, 6.1.3, 7.2 Rev Guidin 10,14			
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