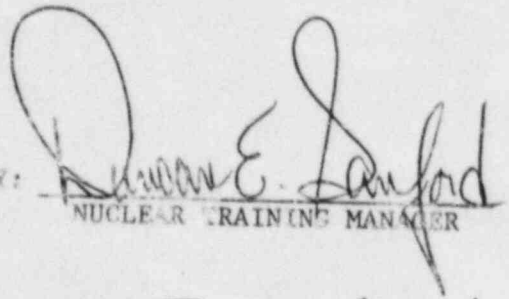



PILGRIM NUCLEAR POWER STATION
TRAINING MANUAL

APPROVED FOR
PROGRAM ADEQUACY:


NUCLEAR TRAINING MANAGER

DATE: 12-15-81

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R. D. MACHON
STATION MANAGER
PILGRIM NUCLEAR POWER STATION

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2	Director of Outage Management
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7	Chief Maintenance Engineer
8	Chief Technical Engineer
9	Chief Radiological Engineer
10	Operations Training Supervisor
11	Senior Nuclear Training Specialist
12	Technical Training Group Leader
13	Nuclear Training Specialist
14	Comprehensive Training Coordinator
15	Security Supervisor
16	Fire Prevention and Protection Officer
17	Main Control Room
18	Document Control Center
19	Quality Assurance Manager
20	U.S. NRC Licensing Branch
21	Nuclear Training Manager
22	U.S. NRC Resident Inspectors
23	Administrator, Staff Development
24	Nuclear Engineering Manager
25	Nuclear Management Services Manager

PILGRIM NUCLEAR POWER STATION

TRAINING MANUAL

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1.0 INTRODUCTION

1.1 Objective

The Pilgrim Training Manual has been developed to consolidate, into one manual, the training procedures utilized to develop and maintain the job proficiency of the entire Pilgrim Staff. Properly conducted and properly documented training will ensure continued safe and efficient operation of the Pilgrim Station. The training programs established in this manual satisfy the commitment made in Section 6.4 of the Pilgrim technical specifications.

The Pilgrim Training Manual complies with all regulations listed in Table I, "Training Requirements". Table II is a matrix showing the applicability of these requirements to various groups within the Pilgrim Station. The content of each of these particular references is briefly summarized in the "Program Requirements" section of each particular training program addressed.

Table I Training Requirements

Title 10

10CFR19	Notices, Instructions and Reports to Workers; Inspections
10CFR20	Standards for Protection Against Radiation
10CFR50	Licensing of Production and Utilization Facilities
10CFR50, Appendix B	Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants
10CFR55	Operator Licenses
10CFR55 Appendix A	Requalification Programs for Licensed Operators of Production and Utilization Facilities
10CFR73	Physical Protection of Special Nuclear Material
<u>NRC</u>	USNRC Letter from H. Denton, Director Office of Nuclear Reactor regulation - dated March 29, 1980 - To all power reactor applicants and licensees on the subject of qualifications of reactor operators

Regulatory Guides

Regulatory Guide 1.8	Personnel Selection and Training
Regulatory Guide 1.70	Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants
Regulatory Guide 1.71	Welder qualifications for Areas of Limited Accessibility
Regulatory Guide 8.13	Instructions Concerning Prenatal Radiation Exposure

American Nuclear Standards Institute (ANSI) Standards

ANSI N18.1	Selection and Training of Nuclear Power Plant Personnel
------------	--

Table I (continued)

ANSI N18.17-1973 Industrial Security for Nuclear Power Plants
ANSI N45.2.3 Housekeeping During the Construction Phase of
 Nuclear Power Plants

American Society of Mechanical Engineers Boiler and Pressure

Vessel Code

Section 9 Welding Qualifications

Commonwealth of Massachusetts, Department of Public Safety, Division of

Inspection, General Laws

Chapter 146 Licenses of Engineers

Pilgrim Procedures

Administrative Procedure 1.4	Personnel and Equipment Safety
Emergency Procedure 5.8.1	Procedure for Radiation Emergency Drill
Administrative Procedure 1.3.14	Indoctrination and Training

*Listing a Federal document, other than Title 10, as reference in the table does not necessarily indicate a total commitment to the content of the document. means only that the Pilgrim Training Manual satisfies the suggested training-related content of the referenced document.

TABLE II TRAINING REQUIREMENTS MATRIX

REGULATIONS	GROUP												PROGRAM ORGANIZATION	HEALTH PHYSICS
	MANAGEMENT SYSTEMS		OPERATING		MAINT.		TECH.		METHODS COMPLIANCE TRAINING		GENERAL EMPLOYEE			
	I	P	I	P	I	P	I	P	I	P	I	P		
<u>FEDERAL</u>														
"Denton Letter of March 29, 1980"			x	x					x	x				
10CFR19														
10CFR19.12												x		
10CFR20													x	
10CFR20.101													x	
10CFR20.102													x	
10CFR50														
10CFR50.54 (i-1)				x										
10CFR50, App. B (ANSI N18.7-1972 Rev. 1														
I,II ANSI N18.7, Sect. 3.2														x
II ANSI N18.7, Sect. 3.3	x		x		x		x		x		x			x
II,V	x		x		x		x							
II ANSI N18.7, Sect. 3.1														x
II ANSI N18.7, Sect. 5.1														x
II a) ANSI N18.7, Sect. 5.2.10	x				x		x							x
b) ANSI N45.2.3, Sect. 2.4	x				x		x							x
III	x		x		x		x							x
VI ANSI N18.7, Sect. 5.2.15	x	x	x	x	x	x	x	x	x	x				x
IX ANSI N18.7, Sect. 5.2.12														x
IX ANSI N18.7, Sect. 5.2.18					x	x								
XVI ANSI N18.7, Sect. 5.2.11														x
XVII ANSI N18.7, Sect. 5.2.12														x
XVII ANSI N18.7, Sect. 5.2.13.1														x
XVIII ANSI N18.7, Sect. 4.5														x
10CFR55			x	x										
10CFR55, App. a/Pilgrim Requal. Prog.				x										
10CFR73 (ANSI N18.17, Sect. 4.7)												x		
Pilgrim FSAR, Sect. 13.3														x
Regulatory Guide 1.8 (ANSI N18.1-1971)														
Section 4	x		x		x		x							x
Section 5.1														x
Section 5.2				x										
Section 5.3				x		x		x						x
Section 5.4												x		
Section 5.5												x		
Section 5.5.1					x								x	
Section 5.6														x
Regulatory Guide 1.70.38														
Section 13.2.2														x
Section 13.2.2.1		x		x		x		x		x		x		
Section 13.2.2.2	x		x		x		x		x		x			x
Section 13.2.2.3				x										
Regulatory Guide 1.71					x	x								
Regulatory Guide 8.13												x		x
Boiler & Press. Vessel Code, IX					x	x								
<u>STATE</u>														
Commonwealth of Mass. Dept. of Public Safety, Div. of Inspection, Chap. 146			x											

TABLE II TRAINING REQUIREMENTS MATRIX

REGULATIONS I = Initial Training
P = Periodic Training

COMPANY	MANAGEMENT SYSTEMS		OPERATING		GROUP MAINT.		TECH.		METHODS TRAINING COMPLIANCE		GENERAL EMPLOYEE		PROGRAM ORGANIZATION	HEALTH PHYSICS
	I	P	I	P	I	P	I	P	I	P	I	P		
Administrative Procedure 1.4														
Administrative Procedure 5.1 (App. VIII)													x	
Pilgrim Job Specifications	x		x		x		x		x				x	

1.2 Overall Training Program Organization

1.2.1 Overall Training Program Requirements

Requirements Satisfied

Requirement Summary

1.	a)	10CFR50, Appendix B, Criteria II (ANSI N18.7, Section 5.1)	Requirements for Training, Training Program Description
	b)	Regulatory Guide 1.8 (ANSI N18.1, Section 5.1)	
	c)	Regulatory Guide 1.70.38, Section 13.2.2	
2.	a)	Regulatory Guide 1.8 (ANSI N18.1, Section 5.5)	General Requirements Retraining
3.	a)	10CFR50, Appendix B, Criteria II (ANSI N18.7, Section 3.1)	Requirements for Admini- strative Controls
4.	a)	10CFR50, Appendix B, Criteria I & II (ANSI N18.7, Section 3.2)	Assignment of Authority and Responsibility
	b)	Regulatory Guide 1.70, Section 13.2.1.9	
5.	a)	10CFR50, Appendix B, Criteria XVIII (ANSI N18.7, Section 4.5)	Training Program Audit Requirements
6.	a)	10CFR50, Appendix B, Criteria XVI (ANSI N18.7, Section 5.2.11)	Requirements for Corrective Action

Requirements Satisfied

Requirement Summary

- | | | | |
|----|----|---|---------------------------------|
| 7. | a) | 10CFR50, Appendix B,
Criteria XVII (ANSI
N18.7, Section 5.2.13.1) | Procurement Document
Control |
| 8. | a) | 10CFR50, Appendix B,
Criteria IX and XVII
(ANSI N18.7, Section
5.2.12) | Training Program Records |
| | b) | Regulatory Guide 1.8
(ANSI N18.1, Section N.6) | |

1.2.2 Overall Training Program Description

All employees at the Pilgrim Station are required to participate in the training specified in this manual. This training consists of three types, General Employee Training, Group Training and Special Training. All personnel participate in General Employee Training prior to starting work at Pilgrim Station and then periodically thereafter. Following the completion of initial General Employee Training, all personnel will participate in Group Training in order to assure that suitable job proficiency is achieved and maintained.

The Nuclear Training Manager has overall responsibility for the implementation of all training required in accordance with this manual.

The Nuclear Training Manager has direct responsibility for General Employee Training. Each group leader is directly responsible for conducting group training within his group under the cognizance of the Nuclear Training Manager. Specific individual training responsibilities are outlined in the appropriate section of this manual.

The Senior Nuclear Training Specialist will maintain an individual training record of each and every person employed at Pilgrim Station. These records will be filed in a designated training center file. All individuals holding NRC Reactor Operator and Senior Reactor Operator Licenses, regardless of group, will have their training records maintained in the Operation Group file. The detailed content of each training record and required retention periods are summarized at the end of each section of Group Training.

In accordance with the Boston Edison Company Quality Assurance Manual, a system of procurement document control will assure that all service personnel meet qualification requirements specified in applicable codes and standards.

The Pilgrim Training Manual and individual training files serve as a basis for audit and review by the Boston Edison Quality Assurance Organization. Any deficiencies observed will be reported to the Nuclear Operations Manager. Followup corrective action will be taken by the Nuclear Training Manager.

All forms utilized to document training are coded such that each form can more easily be identified.

- GET Forms utilized to document General Employee Training
- G Multi-purpose forms utilized to document training conducted in more than one group.
- O Forms utilized to document training only for the Operations Group.
- M Forms used to document training only for the Maintenance Group
- T Forms used to document training only for the Technical Group
- H Forms used to document training only for the Health Physics Group.
- A Forms used to document training only for the Training Group
- S Forms utilized to document Special Training.
- STA Forms used to document training only for the Shift Technical Advisors Group.
- OST Forms used for off-site training.

A comprehensive list of all forms utilized in conjunction with this manual is included in the table of contents.

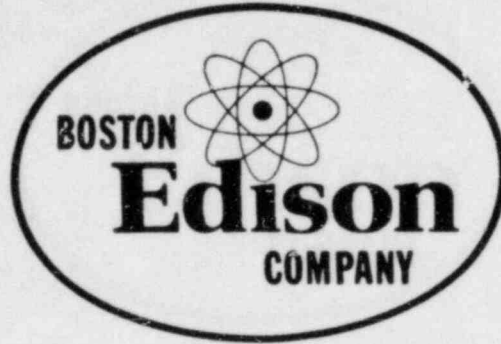
1.2.3 Control of Training Manual Revisions

Changes in training requirements will be incorporated into the Training Manual by the Nuclear Training Department. All changes will be reviewed by:

- Cognizant Chief Engineer/Group Leader
- Appropriate Department Manager
- Training Manager

Changes may be made to individual pages of this manual. Each page that is changed will be indicated by the appropriate revision number in the lower right corner. A summary list of training manual changes will be maintained by the Nuclear Training Department. This list will indicate applicable revised page numbers, date of revision, revision number and the signatures of approving managers for changes made after 12/15/81. Revisions will become effective upon date of signature of Nuclear Training Manager.

Copies of this manual will be issued to applicable management personnel. Manual holders will be required to acknowledge receipt of the manual and revisions via the signature and return of a Document Control Acknowledgement form which will be issued by Document Control, with each revision to the manual.



NUCLEAR ORGANIZATION
TRAINING POLICY

Approved for Use: W.D. Harrington
Sr. Vice President
Nuclear Activities

Effective Date May 7 1982 rev. 0

NUCLEAR TRAINING POLICY

1.0 PURPOSE

The purpose of the policy is to establish the Organization's position, commitment, and approach to the training of Nuclear Organization personnel.

2.0 POLICY

2.1 Training Goals

It is the policy of the BECo Nuclear Organization to meet its organizational objectives through a productive work force with the qualifications necessary to perform assigned tasks effectively and safely under normal, abnormal and emergency conditions. Further it is the policy to provide all nuclear personnel with the opportunity to acquire additional knowledge and skills required for advancing their careers within BECo.

The Nuclear Organization's commitment to training shall be evidenced by the allocation of sufficient resources to ensure the development of a comprehensive, ongoing training program, which will be responsive to corporate policy and industrial/regulatory requirements.

2.2 Training Philosophy

The approach to Nuclear Training consists of an ongoing integrative process involving four basic steps, i.e., identification and analysis of training needs, design of training programs, presentation of programs, and evaluation and reinforcement of training.

The training function is a critical element in the organization's commitment to human resource development. Therefore, all nuclear managers and supervisors have a responsibility to contribute to the effectiveness of the training process.

The Nuclear Training Manager is responsible for the overall coordination and management of the process.

3.0 APPLICABILITY

This policy is applicable to all Nuclear Organization units and personnel.

4.0 RESPONSIBILITIES

4.1 Senior Vice President - Nuclear Activities

- To insure this policy statement is communicated to and implemented within the Nuclear Organization.
- To provide resources necessary to achieve training objectives outlined in the approved plan.

4.2 Department Managers

- To evaluate training needs expressed within the department and participate with the training manager and other department managers in formulating training plans which are supportive of organizational objectives, programs and commitments.

4.3 Training Advisory Council (TAC)

The council will consist of the Department Managers, or designees, and the Training Manager, who shall act as chair. The Council will meet quarterly for the following purposes:

1. Advise and assist in the analysis of training needs.
2. Provide feedback on the effectiveness of Training Programs.
3. Assist the Training Manager in developing the Annual Training Plan and Budget.

4.4 Supervisors/Group Leaders

- Assess training needs, in coordination with training staff, of his/her unit.
- Communicate with the training staff and the appropriate department manager concerning these training needs.
- Make time available for staff to participate in training.

- Evaluate the results of training and reinforce its application on the job.
- Conduct on the job training within the unit, as appropriate.

4.5 Individual Employee

- Actively participate in the training process by: contributing information concerning his/her training needs; participating in scheduled training sessions; and applying learned information/skills in the performance of assigned job.

4.6 Nuclear Training Manager

- To provide the overall leadership and to facilitate communications for the planning and control of the needs assessment, development, implementation and evaluation of Nuclear Training Programs.
- Provide the nuclear organization with a qualified training staff and training programs which are responsive to the needs of the organization, compatible with corporate policies, and responsive to regulatory and industry requirements.
- Prepare and submit, as part of the budget planning and control process, the Annual Training Plan and Budget.

2.0 GENERAL EMPLOYEE TRAINING

Objective

The objective of the Pilgrim General Employee Training Program is to indoctrinate all employees in the general procedures utilized to assure nuclear plant safety and personnel safety. General Employee Training covers these areas:

1. Station Quality Assurance Indoctrination
2. Radiological Health and Safety
3. Industrial Health and Safety
4. Security
5. Plant Organization and Administration
6. Plant Familiarization/BWR Operation

Participation

All new employees requiring unescorted access at the Pilgrim Station participate in initial General Employee Training. In order to assure that the knowledge acquired during initial general employee training is retained, general employee retraining is conducted periodically.

2.1 Initial General Employee Training

2.1.1 Program Requirements

<u>Training Requirements Satisfied</u>		<u>Requirement Summary</u>
1.	a) Regulatory Guide 1.8 (ANSI N18.1, Section 5.4)	Requirements for General Employee Training
	b) Regulatory Guide 1.70.38, Section 13.2.2.3	
2.	a) 10CFR50, Appendix B, Criteria II (ANSI N18.7, Section 3.3)	Quality Assurance Indoctrination
3.	a) Regulatory Guide 1.8 (ANSI N18.1, Section 5.4)	Radiological Health & Safety Indoctrination
	b) 10CFR19.12	
	c) 10CFR20.101 & 102	
4.	a) Regulatory Guide 1.8 (ANSI N18.1, Section 5.4)	Facility Contingency Procedure Indoctrination
	b) 10CFR19.12	
5.	a) Regulatory Guide 1.8 (ANSI N18.1, Section 5.4)	Industrial Health & Safety Indoctrination
6.	a) Regulatory Guide 1.8 (ANSI N18.1, Section 5.4)	Facility Access Control and Security Indoctrination
	b) 10CFR73	

7. a) Regulatory Guide 8.13

Instructions for Women
in Restricted Areas
Concerning Prenatal
Radiation Exposure

2.1.2 Program Description

The initial General Employee Training Program covers those topics specified in Form GET-1, "General Employee Training Checklist". The indoctrination in each of the five major areas of the checklist is conducted utilizing a lesson plan retained by the Senior Nuclear Training Specialist. Each lesson plan will be prepared in accordance with Form G-1, Lesson Plan Format. The topics to be covered are outlined below:

1. Quality Assurance Program Indoctrination

Complete a quality assurance program indoctrination including:

- a) The purpose of the Boston Edison QA program
- b) The overall company policies, procedures and instructions which establish the program
- c) Explanation of the 18 criteria of 10CFR50, Appendix B

Requirements Satisfied

- a) 10CFR50, Appendix B, Criteria II (ANSI N18.7, Section 3.3)
- b) BEQAM, Volume II

2. Radiological Health and Safety Indoctrination

Complete a radiological health and safety indoctrination which include the following items:

- a) Health Protection problems associated with exposure to radiation.
- b) The precautions, procedures and techniques to minimize radiation exposure.
- c) The purpose and function of protective devices.
- d) The dose/exposure limits delineated in 10CFR20 and the importance of observing these limits.
- e) The individual's responsibility to promptly report to the plant management any condition which might lead to overexposure or unnecessary radiation exposure.
- f) Reports available to each individual on the individual's radiation exposure (pursuant to 10CFR19.13).
- g) The appropriate response to warnings made in the event of any unusual occurrence or malfunction that may involve exposure to radiation or radioactive material.
- h) The importance of and the techniques utilized in contamination control.
- i) The methods utilized in personnel and equipment decontamination.
- j) The requirements for and the proper use of personnel monitoring equipment.
- k) The use of protective clothing and equipment (ANSI N18.1, Section 5.4)
- l) The content of Regulatory Guide 8.13, "Instructions Concerning Prenatal Radiation Exposure" (women assigned work in restricted areas only).
- m) The concept of "ALARA".

Requirements Satisfied

- a) Regulatory Guide 1.8
(ANSI N18.1, Section 5.4)

- b) 10CFR19.12
- c) 10CFR20.101 and 102

3. Facility Contingency Procedure Indoctrination

Complete an indoctrination on the below listed facility contingency procedures including events causing the procedure to be utilized, the alarm sounded and the required action.

- a) Radiation Emergency Procedure (Administrative Procedure 5.1)
- b) Natural Disaster Procedure (Administrative Procedure 5.2)
- c) Fire Procedure (Administrative Procedure 5.5.1)
- d) Personnel Injury Procedure (Administrative Procedure 5.6)

Requirements Satisfied

- a) Regulatory Guide 1.8
(ANSI N18.1, Section 5.4)
- b) 10CFR19.12

4. Industrial Health and Safety Indoctrination

Complete and industrial health and safety indoctrination on the following:

- a) The purpose of OSHA
- b) Injury reporting requirements
- c) Responsibilities to report unsafe conditions
- d) Administrative Procedure 1.4, "Personnel and Equipment Safety"

Requirements Satisfied

a) Regulatory Guide 1.8

(ANSI N18.1, Section 5.4)

5. Facility Access Control and Security Indoctrination

Complete an indoctrination on facility access control and security procedures (Administrative Procedure 1.6)

Requirements Satisfied

a) Regulatory Guide 1.8

(ANSI N18.1, Section 5.4)

b) 10CFR73

After the new employee completes the indoctrination in a particular area, the Comprehensive Training Coordinator or designated representative will answer any questions the new employee might have and then date the appropriate item on the individual's General Employee Training Checklist.

After the new employee has completed all portions of the General Employee Training Checklist, he/she will be evaluated either by written quiz or oral examination covering the content of the general employee training program lesson plans. Passing grade on the written quiz is 80% while the oral exam is either pass or fail. The results of the evaluation will be documented by the Comprehensive Training Coordinator on the individual's General Employee Training Checklist.

When the entire checklist has been completed, the Comprehensive Training Coordinator will certify with his/her signature the completion of the individual's initial general employee training and file the General Employee Training Checklist along with the written exam in the individual's training record folder.

Temporary maintenance and service personnel shall be trained in areas only to the extent necessary to assure safe execution of their duties. Normally

this will include those topics included in the normal general employee training program with the exception of the quality assurance indoctrination. Completion of general employee training for contractors is documented on Form GET-1.

2.1.3 Program Schedule

All new Pilgrim Station and temporary maintenance and service personnel requiring un-escorted access will complete initial General Employee Training prior to starting work at the Pilgrim Station.

2.1.4 Program Responsibilities

2.1.4.1 Comprehensive Training Coordinator

The Comprehensive Training Coordinator, or his designee, is responsible for General Employee Training. Specifically, he/she will:

- a) Conduct the General Employee Indoctrination for all new employees or delegate this responsibility to a qualified individual.
- b) Prepare and grade all written quizzes on the content of the General Employee Training Program.
- c) Administer General Employee Training Program oral examination or delegate this responsibility to a qualified individual.
- d) Maintain program documentation as specified in Section 2.1.5 of this manual.
- e. Determine the depth of coverage for General Employee Training of Contractor personnel.

- f) Inform all plant employees of any significant change in a procedure covered during General Employee Training. For example, a significant change in the station security procedure would require either a specially scheduled training session or an explanation of the procedure change routed to station personnel in accordance with administrative procedure 1.3.4, "Procedures".

2.1.5 Program Documentation

The Comprehensive Training Coordinator is responsible for maintaining all records associated with initial General Employee Training. This includes:

a. Individual Training Records

The Comprehensive Training Coordinator will ensure that each permanent employee at the Pilgrim Station has a completed "General Employee Training Checklist" in his or her training record. The written quiz, if administered, will be attached to the Checklist. This documentation will be retained for the life of the plant (P.N.P.S.) plus 10 years. Permanent storage of all records will be in accordance with the criteria set forth in the Nuclear Organization Document Control Department.

b. General Employee Training Checklists for Contractors

The Comprehensive Training Coordinator will maintain a "General Employee Training Checklist for Contractors", Form GET-1, for each contractor in one file.

c. General Employee Training Lesson Plans

The Comprehensive Training Coordinator will maintain copies of all General Employee Training Lesson Plans. These lesson plans will be updated as necessary.

2.2 General Employee Retraining

2.2.1 Program Requirements

Training Requirements Satisfied

Requirement Summary

- | | |
|---|--|
| 1. a) Regulatory Guide 1.8
(ANSI N18.1, Section 5.5) | Requirements for
General Employee
Retraining |
| b) Regulatory Guide 1.70,
Section 13.3.3 | |
| 2. Administrative Procedure 1.4 | Requirements for
Periodic Safety
Training |

2.2.2 Program Description

The General Employee Retraining program consists of:

a. Lecture Series

A general employee retraining lecture series will be conducted annually covering the same five areas covered during initial general employee training. A written quiz will be administered to each individual at the conclusion of the General Employee Retraining lecture series.

b. On-The-Job Safety Training

All station supervisors are responsible for on-the-job safety training and instruction of employees who work under their direction and control. Each department holds monthly safety meetings with personnel assigned to that department in accordance with administrative procedure 1.4.17.

2.2.3 Program Schedule

The General Employee lecture series will be conducted periodically as specified by the Comprehensive Training Coordinator. The entire lecture series, consisting of five subjects, can be completed in one day. A person missing the lecture series or any particular lecture is required to review the material listed in the lesson plan and complete a check-out by the General Employee Training Coordinator or his/her designated representative. The written quiz will normally be administered at the end of the lecture series.

2.2.4 Program Responsibilities

2.2.4.1 Comprehensive Training Coordinator

The Comprehensive Training Coordinator has overall responsibility for the general employee retraining program. Specifically, he/she will:

1. Schedule lectures and assign qualified lecturers for the General Employee retraining lecture series. Form GET-3 is utilized to document lecture attendance.
2. Prepare, grade and administer written quizzes covering the content of the General Employee Retraining program.
3. Maintain program documentation as specified in Section 2.2.5 of this manual.
4. In cases where an individual misses general employee retraining lectures, the Senior Nuclear Training Specialist will checkout the individual utilizing the applicable lesson plan and certify checkout completion as specified in Section 2.2.5.

2.2.4.2 Assigned Lecturers

Assigned lecturers are responsible for the following:

1. After being assigned a lecture, prepare a lesson plan, Form G-1.
2. Presenting a well-prepared lecture on the topic assigned.
3. Documenting lecture attendance on Form GET-3, and return it to the Comprehensive Training Coordinator.

2.2.4.3 Plant Departments

All plant departments are responsible for the following:

1. On-the-job safety training and instruction of employees working under their direction.
2. Holding monthly safety meetings with personnel assigned to the department.

2.2.5 Program Documentation

The Comprehensive Training Coordinator is responsible for maintaining the following records associated with General Employee Retraining.

a. Training Attendance Form

The Comprehensive Training Coordinator will retain all General Employee lecture attendance forms.

b. General Employee Retraining Records

The Comprehensive Training Coordinator is responsible for documenting the applicable section of Form GET-2. "General Employee Retraining Record." The most recent General Employee Retraining Record with the written quiz attached will be maintained in each individual's training record. In cases where an individual misses a General Employee Retraining topic,

the Comprehensive Training Coordinator or his/her designated representative will checkout the individual utilizing the applicable lesson plan and then certify checkout completion by dating and signing Form GET-2.

2.2.6 GET for High Priority Personnel

Occasionally personnel arrive at Pilgrim Station after having just left another nuclear power plant site. Critical path jobs, during an outage may require a consultant be brought on site. Also, NRC inspectors may require access to the site.

To facilitate these personnel the Form GET-4 "General Employee Training for High Priority Personnel" will be used. The Comprehensive Training Instructor shall have the form completed and then evaluate the background of the personnel. The Comprehensive Training Instructor will then check off the applicable block for recommended training. The training given will then be documented on the applicable GET Forms used for all site personnel. These forms will be attached to Form GET-4 and filed as per GET procedures.

NUCLEAR TRAINING PROGRAMS

MODULE LEARNING PACKAGE FORMAT

I. COVER PAGE

A. Titles

Program: _____

Course: _____

Module Name and Number: _____

B. Approximate Number of Classroom Contact Hours: _____

C. Audience: (Categories of personnel this package prepared for)

D. References: (With applicable revision numbers)

E. Approvals

Prepared by: _____ Date _____

Approved for
Technical Adequacy: _____ Date _____

Approved for
Instructional Adequacy: _____ Date _____
Staff Development
Administrator

Approved for Program
Adequacy and Use: _____ Date _____
Nuclear Training Manager

II. TRAINEE PREPARATION REQUIRED AND INSTRUCTIONS

III. LEARNING OBJECTIVES

A. Performance Objective

B. Specific Enabling Objectives

IV. NARRATIVE DISCUSSION

V. QUIZ QUESTIONS

Program/Course _____
 Unit _____
 Date Started _____
 Date Completed _____
 NTD Group Leader _____

Day 1 Day 2 Day 3 Day 4 Day 5
 Hours: Hours: Hours: Hours: Hours:
 Module(s): Module(s): Module(s): Module(s): Module(s):

STUDENT: Please print your name Soc. Sec. No. and sign your name.		BECo / Dept. Contractor Co.	Day 1	Day 2	Day 3	Day 4	Day 5
Name:							
S.S.#:							
Sign:							
Name:							
S.S.#:							
Sign:							
Name:							
S.S.#:							
Sign:							
Name:							
S.S.#:							
Sign:							
Name:							
S.S.#:							
Sign:							
Name:							
S.S.#:							
Sign:							

INSTRUCTIONS:

1. The first day of each class, fill in the following information: PROGRAM/COURSE, UNIT, DATE STARTED, and INSTRUCTOR KEY (print name and initial block to right).
2. Have the students fill in the following: STUDENT NAME, SOCIAL SECURITY NUMBER, and the BECo/DEPT./CONTRACTOR CO. block. Each student also signs his/her name.
3. At the end of each day, fill in the number of contact hours and the modules covered as applicable. For each student attending full-time, initial that day's block.
If a student is absent, the block for that day is lined out. If a student attends part-time, write in the hours attended and initial the block.
4. The instructor retains the sheet(s). At the end of each day, he/she repeats Step 3 above.
5. At the end of the week or class, whichever is first, fill in the DATE COMPLETED. Forward all completed forms to the appropriate NTD Group Leader. A new form must be utilized at the beginning of each week as per Steps 1 through 4 above.

PNPS
GENERAL EMPLOYEE TRAINING CHECKLIST

PRINT EXCEPT WHERE SIGNATURE IS REQUIRED.

NAME _____ COMPANY _____ DATE _____
SOCIAL SECURITY NUMBER _____

INSTRUCTION TO WORKERS (10CFR19.12)

All individuals working in or frequenting any portion of a restricted area shall be kept informed of the storage, transfer, or use of radioactive materials or of radiation in such portions of the restricted area; shall be instructed in the health protection problems associated with exposure to such radioactive materials or radiation, in precautions or procedures to minimize exposure, and in the purposes and functions of protective devices employed; shall be instructed in, and instructed to observe, to the extent within the worker's control, the applicable provisions of Commission regulations and licenses for the protection of personnel from exposures to radiation or radioactive materials occurring in such areas; shall be instructed of their responsibility to report promptly to the licensee any condition which may lead to or cause a violation of Commission regulations and licenses or unnecessary exposure to radiation or to radioactive material; shall be instructed in the appropriate response to warnings made in the event of any unusual occurrence or malfunction that may involve exposure to radiation or radioactive material; and shall be advised as to the radiation exposure reports which workers may request pursuant to 19.13. The extent of these instructions shall be commensurate with potential radiological health protection problems in the restricted area.

I have read and understand the above and agree to abide by the regulations of the Boston Edison Company prior to gaining access to areas where radiation exposure may be received.

EMPLOYEE'S SIGNATURE

GENERAL EMPLOYEE TRAINING LECTURE TOPICS

DATE COMPLETED

- | | |
|--|-------|
| 1. STATION QUALITY ASSURANCE INDOCTRINATION | _____ |
| 2. RADIOLOGICAL HEALTH AND SAFETY REVIEW | _____ |
| 3. STATION CONTINGENCY PROCEDURE REVIEW | _____ |
| 4. INDUSTRIAL HEALTH AND SAFETY REVIEW | _____ |
| 5. FACILITY ACCESS CONTROL AND SECURITY PROCEDURE REVIEW | _____ |

TRAINING EVALUATION (CHECK ONE) QUIZ _____ ORAL EXAM _____

QUIZ GRADE _____ DATE PASSED _____ EXAMINERS SIGNATURE _____

GENERAL EMPLOYEE TRAINING COMPLETED _____
DATE _____

COMPREHENSIVE TRNG. COORDINATOR'S
SIGNATURE

PNPS

General Employee Retraining Record

Name _____ Company _____ Date _____

Social Security Number _____

	<u>Lecture Topic</u>	<u>Date Completed</u>
1.	Station Quality Assurance Review	_____
2.	Radiological Health and Safety Review	_____
3.	Station Contingency Procedure Review	_____
4.	Industrial Health and Safety Review	_____
5.	Facility Access Control and Security Procedure Review	_____

Training Evaluation (Check One)

Quiz _____ Oral Exam _____ Quiz Grade _____ Date Passed _____

Examiner's Signature

GET Completed

Date

Signature, Comprehensive
Training Coordinator

PNPS
GENERAL EMPLOYEE
TRAINING ATTENDANCE FORM

SUBJECT: GENERAL EMPLOYEE TRAINING DATE: _____

TYPE OF TRAINING: VIDEOTAPE AND LECTURE LENGTH: _____ HOURS

LESSON PLAN NO.: GET-1 INSTRUCTOR: _____

TOPICS COVERED: RADIATION PROTECTION, PLANT SECURITY, PLANT SAFETY AND
FIRE PROCEDURES, RESPIRATOR TRAINING AND QUALITY ASSURANCE

	<u>ATTENDEES</u>		<u>DATE OF LAST GENERAL EMPLOYEE TRAINING</u>	<u>SOCIAL SECURITY NO</u>
	<u>PRINT NAME</u>	<u>COMPANY</u>		
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
11.	_____	_____	_____	_____
12.	_____	_____	_____	_____
13.	_____	_____	_____	_____
14.	_____	_____	_____	_____
15.	_____	_____	_____	_____
16.	_____	_____	_____	_____
17.	_____	_____	_____	_____
18.	_____	_____	_____	_____
20.	_____	_____	_____	_____

ATTENDEES

<u>PRINT NAME</u>	<u>COMPANY</u>	<u>DATE OF LAST GENERAL EMPLOYEE TRAINING</u>	<u>SOCIAL SECURITY NO.:</u>
21.			
22.			
23.			
24.			
25.			
26.			
27.			
28.			
29.			
30.			
31.			
32.			
33.			
34.			
35.			
36.			
37.			
38.			
39.			
40.			

_____, Lecture attendance documented in individual's records,
initial when completed.

PNPS
GENERAL EMPLOYEE TRAINING QUESTIONNAIRE
FOR HIGH PRIORITY PERSONNEL

Please supply the following information and approximate dates when requested.

NAME _____ SSN _____ DATE _____

COMPANY _____ JOB TITLE _____

1. Have you had General Employee Training at Pilgrim Station?

NO YES WHEN? _____

2. Have you had any General Employee Training at some other operating Nuclear Power Station?

NO YES WHEN? _____

(USE OTHER SIDE IF ADDITIONAL SPACE IS NEEDED)

3. What experience have you had wearing protective clothing?

NONE AVERAGE ABOVE AVERAGE LATEST DATE _____

4. What experience have you had wearing a respiratory mask?

NONE AVERAGE ABOVE AVERAGE LATEST DATE _____

VISITOR'S SIGNATURE

INSTRUCTOR

Check block for recommended training.

Review orally General Employee Training Pamphlet.
 ---Give written quiz.

Review contents of General Employee Training Lesson Plan.
 ---Give mask training and written quiz.

---Give complete General Employee Training.

DATE

INSTRUCTOR'S SIGNATURE

DATE

COMPREHENSIVE TRNG. COORDINATOR

3.0 GROUP TRAINING

Objective

The Pilgrim Group training programs are established to initially develop and maintain an organization fully qualified to be responsible for the operation, maintenance and other technical aspects of the Pilgrim Station.

General Program Requirements

Requirements Satisfied

1. a) Regulatory Guide 1.8
(ANSI N18.1, Sections 5.1 and 5.5)
2. a) Regulatory Guide 1.8
(ANSI N18.1, Section 4)
- b) Pilgrim Job Specifications

Requirement Summary

Requirements for Training and Retraining

Personnel Qualifications

Program Description

Pilgrim group training takes two forms, first, initial on-the-job group training to develop job proficiency and, secondly, periodic group training to maintain this proficiency.

After completing initial General Employee Training, a new employee reports to his or her assigned group for initial group training. Group training is completed utilizing a training form. Each group has its own form consisting of several sections. The first section in each group's checklist is entitled, "General Indoctrination." By completing this portion of the training checklist, the new employee is given a job-related indoctrination

into some of the major procedures and policies utilized by the group. After completing the general indoctrination, the new employee completes those additional portions of the form corresponding to his or her specific job title. Initial group training shall be completed within a given time period or prior to performing certain duties as specified by the Group Leader after appointment to a given position.

After an individual has completed initial group training, he/she must participate in the retraining to maintain job proficiency. The group retraining programs vary from group to group.

Management and Supervisory personnel meet the requirements specified in ANSI N18.1 and, as such, are qualified to perform their specific job on the basis of experience. Unless otherwise specified, training and retraining for the facility staff will be conducted in accordance with PNPS Technical Specification 6.4 in order to maintain job proficiency.

Facility Design, License and Procedure Changes

In addition to the specific group training requirements specified for each group, there is a responsibility to keep personnel fully informed of applicable procedure changes, facility design changes and facility license changes.

Off-Site Information Review

The station receives correspondence from the NRC, General Electric, License Event Reports (LER) from other nuclear stations, etc. This correspondence often contains pertinent information applicable to

the operation and maintenance of Pilgrim. The Training Group will review this information to determine what type of training, if any, is required. The intent is to increase awareness of station personnel of problems and conditions within the nuclear industry, additionally, improve supervisory skill and procedure revisions as required to control activities of individual works at the Station.

Document Acknowledgement

The type of training required for off-site information, facility design, license and procedure changes is accomplished in conjunction with the procedure outlined in the Document Control Procedure 1.3.8. If routing is indicated, an assigned clerk will then complete, log and transmit a Document Acknowledgement Form G-4.

Program Participation

All employees will participate in their particular group training program.

Program Responsibilities

The Senior Nuclear Training Specialist has overall responsibility for the implementation of the Group Training Programs. The Senior Nuclear Training Specialist has the authority to delete any group qualification requirements when the individual's experience or other special factors indicate that the requirement is met or exceeded. When an item is deleted, it will be so documented on the group training checklist, annotated with the basis for deletion, and signed by the Senior Nuclear Training Specialist.

Program Documentation

Unless otherwise specified, all group training will be documented by the respective group head or his designated alternate on a Training Attendance Form G-2 and forwarded to the Training Department for documentation in the individual's record. The types of training may be Formal, Discussion, Video Tapes, etc.

Course Critique

At the completion of training sessions an instructor may desire a course critique or the Nuclear Training Manager may desire information regarding a particular course, in these cases the Trainee Feedback Card (Form G-6) will be used.

Form G-6 will be completed by the students and returned to the Training Department for evaluation. The information from Form G-6 will be used to evaluate instructors, courses and progress of the students.

Form G-6 will be filed in with completed course material in the general files.

PNPS
Employee Experience Record

Name _____ Group _____

Social Security Number _____

I. Education

	<u>School</u>	<u>Location</u>	<u>Dates Attended</u>	<u>Degree</u>
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____

II. Experience

	<u>Position</u>	<u>Location</u>	<u>Dates of Position</u>	<u>Job Summary</u>
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

PNPS
TRAINING FORM

NAME _____ GROUP _____

SOCIAL SECURITY # _____

	<u>SUBJECT</u>	<u>TYPE</u>	<u>DATE</u>	<u>HOURS</u>	<u>SIGNATURE</u>
1.	_____	_____	_____	_____	_____
2.	_____	_____	_____	_____	_____
3.	_____	_____	_____	_____	_____
4.	_____	_____	_____	_____	_____
5.	_____	_____	_____	_____	_____
6.	_____	_____	_____	_____	_____
7.	_____	_____	_____	_____	_____
8.	_____	_____	_____	_____	_____
9.	_____	_____	_____	_____	_____
10.	_____	_____	_____	_____	_____
11.	_____	_____	_____	_____	_____
12.	_____	_____	_____	_____	_____
13.	_____	_____	_____	_____	_____
14.	_____	_____	_____	_____	_____
15.	_____	_____	_____	_____	_____
16.	_____	_____	_____	_____	_____
17.	_____	_____	_____	_____	_____
18.	_____	_____	_____	_____	_____
19.	_____	_____	_____	_____	_____
20.	_____	_____	_____	_____	_____

TRAINEE FEEDBACK CARD

Course Title: _____ Course Dates _____ to _____

Your Name: _____ Your Position _____

Your Group Name: _____

INSTRUCTIONS

Your instructor will explain the purpose and scope of this course at the first course session. After this explanation, you will be given time to complete Section I and hand it to your instructor. The card will be returned to you at the end of the course for your completion of Section II.

I. OBJECTIVES (complete at the beginning of course)

Within the scope of this course, what do you expect (need) to gain?
(i.e. your objectives)

II. EVALUATION (complete at the end of course)

a) To what extent were your objectives met in this course?

0 50% 100%

b) Specifically, what did you gain that you can apply to your position, or position for which you are training?

Please circle the applicable rating (5=excellent, 4=good, 3=average, 2=fair, 1=poor)

II. EVALUATION (con't)

1. Instructors: (Please rate each individually)

Instructor's Name	Content	Presentation	Knowledge
a.	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1
b.	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1
c.	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1

2. Program:

a. Level of Presentation:	5 4 3 2 1	f. Appropriate to my job:	5 4 3 2 1
b. Level of Participation:	5 4 3 2 1	g. Examinations/Quizes	5 4 3 2 1
c. Workshops/Labs (if used):	5 4 3 2 1	h. Pace of Instruction:	5 4 3 2 1
d. Written materials and references:	5 4 3 2 1	i. Were your objectives met?	5 4 3 2 1
e. Audio Visual Aids:	5 4 3 2 1	j. Overall Rating of course:	5 4 3 2 1

3. Facilities and Administration:

a. Program Administration:	5 4 3 2 1	d. Equipment and Furnishings:	5 4 3 2 1
b. Classroom Atmosphere:	5 4 3 2 1	e. Pre-program Information:	5 4 3 2 1
c. Convenience:	5 4 3 2 1		

NEEDED IMPROVEMENTS

a. How can we improve this course for future Groups/Comments on above items:

3.1 Operations Group Training

Objective

The objective of Operations Group training is to develop and maintain the proficiency of all personnel in the Operations Department.

Program Requirements

Training Requirements Satisfied

Requirement Summary

- | | | | |
|----|----|---|-----------------------------|
| 1. | a) | 10CFR55 | Requirements for |
| | b) | Regulatory Guide 1.6
(ANSI N18.1, Section 5.2) | Operations Group Training |
| | c) | Regulatory Guide 1.70,
Section 13.2 | |
| | d) | Mass. Division of
Inspection, Chapter 146 | |
| | e) | Regulatory Guide 1.8
(ANSI N18.1, Section 5.3.4) | |
| 2. | a) | 10CFR50, Section 50.54 (i-1) | Requirements for Retraining |
| | b) | 10CFR55, Appendix A | |
| | c) | Regulatory Guide 1.70.38,
Section 13.2.2.1 | |

Training Requirements Satisfied

Requirement Summary

- d) Regulatory Guide 1.8
(ANSI N18.1, Section 5.5.1)
 - e) Pilgrim NRC Licensed Operator
Requalification Program dated
3. a) 10CFR50, Appendix B,
Criteria II (ANSI N18.7,
Section 3.3) Job Related Quality
Assurance Training
4. a) 10CFR50, Appendix B,
Criteria II Indoctrination in proper
use of applicable procedures
- b) 10CFR50, Appendix B,
Criteria V
5. a) 10CFR50, Appendix B,
Criteria III Indoctrination in procedures
utilized to keep current on
applicable design changes/
modifications
- b) 10CFR50, Appendix B,
Criteria VI (ANSI N18.7,
Section 5.2.15)
6. NRC letter to all power reactor Qualifications of Reactor
applicants and licensees -- dated Operators
March 28, 1980 -- from Mr. Harold
R. Denton, Director of Nuclear
Reactor Regulation

3.1.1. Initial Operations Group Training

3.1.1.1 Program Description

Operations Group training is conducted by or under the cognizance of the Nuclear Training Specialist. The Operations Group Training is completed on the following forms:

- Form 0-1 General Indoctrination
- Form 0-2 Qualification Requirements for Nuclear Plant Operator
- Form 0-3A Qualification Requirements for Nuclear Operating Supervisor
- Form 0-3B Qualification Requirements for Nuclear Watch Engineer
- Form 0-4 Qualification Requirements for Senior Reactor Operator
- Form 0-5 Qualification Requirements for Nuclear Auxiliary Operator
- Form 0-6 Qualification Requirements for "Fuel Handler" (Limited SRO License)

The use of a training form provides the Nuclear Training Specialist with maximum flexibility in completing required training. The Nuclear Training Specialist works with the Day Watch Engineer under the guidance of the Senior Nuclear Training Specialist in scheduling the proper combination of on-the-job training and formal classroom training to accomplish the training specified on each training form. On-Watch training conducted is documented on

PNPS Training Form, Form G-5. Examples of the type of training to be documented on Form G-5 are: formal lectures, individual tutoring and plant walk-through.

All individuals reporting into the Operations Group first complete Form 0-1, General Indoctrination. Following completion of Form 0-1, individuals will complete those additional qualification requirements related to their job position.

3.1.1.1.1. Nuclear Plant Operator

All Nuclear Plant Operators are required to complete Form 0-1 and Form 0-2.

Form 0-2 -- Qualification Requirements for Nuclear Plant Operators -- is divided into three parts. Part A contains those requirements to be completed prior to NRC Licensing. Part B contains those elements required to be completed as part of NRC Licensed Operator Training.

Part A and B of the Nuclear Plant Operator Qualification requirements are accomplished by completing on-shift, on-the-job training, and formal training under the cognizance of the Nuclear Watch Engineer and the Pilgrim Station Training Department. As the individual demonstrates competence in specific job-related areas, satisfactory performance is documented by the Nuclear Watch Engineer and/or Nuclear Training Specialist. These parts

of the Nuclear Plant Operator qualification requirements should be completed on a schedule as defined by the Day Watch Engineer prior to the individual's assignment to a shift.

Part C of the Nuclear Plant Operator qualification requirements consists of NRC Licensed Operator Training scheduled by the Nuclear Training Specialist.

Part B specifies that the individual successfully complete the NRC Operator licensing preparatory course within the first enrollment. An overall course grade will be calculated for the course, by suitably averaging all written quizzes and exams, and entered in the space, "Course Grade." The candidate must obtain an 80% overall grade and 70% per section of his/her qualification examination to sit for the actual NRC examination. Copies of all quizzes taken will be retained in the individual's training record until the operator's first license renewal. All training conducted during the license preparatory course will be appropriately documented. At the end of the course, the number of hours spent in preparatory training will be entered in the designated space.

Part B includes checkouts on certain critical plant systems. Checkouts will normally be conducted by either a Nuclear Watch Engineer or the Nuclear Training Specialist. Part of that training covers refueling equipment and refueling procedures. That training will cover the March 8, 1980 refueling

incident where fuel was removed without secondary containment integrity. BECo. committed to NRC in letters dated August 1, 1980 and November 19, 1980 to train operations personnel to assure continual reinforcement of the concerns raised during that incident.

Part C states that potential NRC licensee participate in the day-to-day manipulation of reactor plant controls for at least six (6) months, applicants shall have three (3) months training on shift as an extra person in the control room. This certification is made by the Day Watch Engineer. During this period of on-the-job training, the performance of all reactor startups and reactivity manipulations should be documented in the appropriate spaces. Certification on a BWR Nuclear Power Plant Simulator may be used as a substitute for the two required training startups. Acceptable reactivity manipulations are the same as those utilized in the NRC Licensed Operator Requalification Program (Section 3.1.2.1.3).

Part E requires that, after completing the formal and on-the-job training assigned, the prospective licensee demonstrates to the Nuclear Training Specialist a satisfactory knowledge of each area covered by the NRC written examination.

An evaluation of the Licensed Operator Training completed is documented in Part E. Successful completion of an NRC Simulated Oral Examination is documented utilizing Form 0-7, PNPS Oral Examination Summary Report. The candidate must receive an average point value of 3.0 on Form 0-7. After completing an NRC simulated written examination, which is prepared and graded by the Nuclear Training Specialist, examination results are documented in Part E. Passing grade is 80% overall, 70% per section. After the prospective licensee successfully completes the simulated NRC written and oral

examinations and is recommended for the NRC Examination by the Nuclear Training Specialist, Senior Nuclear Training Specialist and the Nuclear Operations Manager, the Nuclear Training Specialist will prepare the license application and schedule the license examination.

Successful completion of the NRC Licensing Examination will be documented in Part F by the Nuclear Training Specialist.

3.1.1.1.2.1 Nuclear Operating Supervisor

All Nuclear Plant Operating Supervisors are required to complete Forms 0-1, 0-2 and 0-3A.

The completion of Forms 0-1 and 0-2 are as previously described. When Form 0-3A is completed, certification as a Nuclear Operating Supervisor is documented by the Day Watch Engineer, Senior Nuclear Training Specialist and Nuclear Operations Manager.

3.1.1.1.2.2 Nuclear Watch Engineer

All Nuclear Watch Engineers are required to complete Forms 0-1, 0-2, 0-4 and 0-3B. Form 0-3A may or may not be completed. This would depend upon the background of the individual and the circumstances of his/her elevation to the position of Nuclear Watch Engineer.

The completion of Forms 0-1, 0-2 and 0-3A are as previously described. When Form 0-3B is completed, certification as a Nuclear Watch Engineer is documented by the Day Watch Engineer, Senior Nuclear Training Specialist and Nuclear Operations Manager.

3.1.1.1.3 Senior Reactor Operator

All Senior Reactor Operators are required to complete Forms 0-1, 0-2 and 0-4.

The completion of Forms 0-1 and 0-2 are as previously described. When Form 0-4 is completed, certification as a Senior Reactor Operator is documented by the Nuclear Training Specialist and Senior Nuclear Training Specialist. Applicants for a Senior Reactor Operator's license shall have held a Reactor Operator's license for one year.

3.1.1.1.4 Nuclear Auxiliary Operators

All Nuclear Auxiliary Operators are required to complete Forms 0-1 and 0-5.

Form 0-5 is completed in the classroom under the supervision of the Nuclear Training Specialist. When the requirements of Form 0-5 are completed, certification as a Nuclear Auxiliary Operator is documented (see next page)

on Form 0-5 by the Day Watch Engineer and the Senior Nuclear Training Specialist.

3.1.1.1.5 Fuel Handlers (Limited SRO License Holders)

All Fuel Handlers, regardless of Pilgrim group assigned to, are required to complete Forms 0-1 and 0-6.

Form 0-6 contains qualification requirements for fuel handlers. Item 2 of Form 0-6 specifies that the potential fuel handler successfully complete a fuel handler training program emphasizing the theoretical and practical aspects of fuel handling. An overall course grade will be calculated for the program by suitably averaging all written quizzes and examinations, and entered in the space "Course Grade". The candidate must receive a grade of 80% overall, 70% per section to be approved for the NRC Examination. Copies of quizzes and examinations should be retained in the individual's training record until the fuel handler's first license renewal. At the end of the course, the number of hours spent in the fuel handler training program should be entered in the designated space.

Item 3 specifies that the fuel handler participate in on-the-job training. This includes performing at least three satisfactory dummy fuel assembly manipulations and demonstrating

the ability to perform surveillance tests and inspections related to fuel handling. Their training program will also cover the March 8, 1980 fuel handling incident as referenced on page #40 of this manual.

Requirement 4 specifies that, after completing formal and on-the-job training assigned, the prospective licensee demonstrates satisfactory knowledge of each area covered in the NRC Senior Reactor Operator, Limited to Fuel Handling, written examination. An evaluation of completed Fuel Handler training is documented in Item 5. This includes documenting successful completion of an NRC Simulated SRO, Limited to Fuel Handling, oral examination (utilizing Form 0-8, "PNPS Senior Reactor Operator, Limited to Fuel Handling Examination Report.") and the results of the simulated NRC written examination. Note: Passing grade for the oral examination is a point average of 3.0 or better on Form 0-8. Passing grade for the simulated NRC written examination is 80% overall and 70% per section of the examination.

After the prospective licensee successfully completes both examinations and is recommended for the NRC examination by the Nuclear Training Specialist, Senior Nuclear Training Specialist and Nuclear Operations Manager, the Nuclear Training Specialist will prepare the license application and schedule the license examination.

Successful completion of the NRC Senior Reactor Operator, Limited to Fuel Handling, examination is documented in Item 7 by the Nuclear Training Specialist.

3.1.1.2 Program Schedule

Initial operations group training is conducted on a schedule agreed to by the Day Watch Engineer and the Nuclear Training Specialist. The use of forms permit a great deal of flexibility in scheduling both formal day-shift training and on-shift, on-the-job training.

The Nuclear Training Specialist will work closely with the Day Watch Engineer under the guidance of the Senior Nuclear Training Specialist to develop training schedules such that the impact on plant operation will be minimized. For example individuals participating in on-the-job training will normally be placed on different shifts to minimize the training workload per shift.

3.1.1.3 Program Responsibilities

Responsibilities for Initial Operations Group Training are summarized below:

3.1.1.3.1 Nuclear Operations Manager

The Nuclear Operations Manager is responsible for recommending all license candidates for NPC examination.

3.1.1.3.2 Senior Nuclear Training Specialist

The Senior Nuclear Training Specialist is responsible for:

1. Overseeing the implementation of the Initial Operations Group Training Program.
2. Maintaining custody of all operations group personnel training records.
3. Deleting specific group qualification requirements when an individual's experience or other special factors indicate that the requirements are met or exceeded.
4. Certifying the qualification of individuals in the operations group.

3.1.1.3.3 Nuclear Training Specialist

The Nuclear Training Specialist is responsible for:

1. Verifying completion of Form 0-1 for general indoctrination for all new operations group personnel.
2. After consulting with the Day Watch Engineer, developing training schedules necessary to accomplish initial operations group training.
3. Conducting the NRC operating licensing preparatory course and fuel handler training programs as necessary to maintain a sufficient inventory of NRC licensed operators.

4. Conducting NRC licensed operators training as required.
5. Scheduling and conducting the PNPS Oral Examination for all NRC license candidates.
6. Preparing and grading a simulated NRC written examination for all NRC license candidates.
7. Recommending candidates for NRC licensing to the Senior Nuclear Training Specialist and the Nuclear Operations Manager.
8. Conducting training required specifically for Fuel Handlers.
9. Preparing application forms required for NRC licensing.
10. Maintaining all initial operator training program documentation as specified in Section 3.1.1.4.

3.1.1.3.4 Day Watch Engineer

The Day Watch Engineer is responsible for:

1. Assuring that personnel assigned to the operations Group are adequately trained to perform their job functions in a safe and efficient manner.

2. Working with the Nuclear Training Specialist to develop operator training schedules.
3. Documenting the completion of certain specific training form requirements.
4. Certifying the qualification of individuals in the operations group.

3.1.1.3.5 Nuclear Watch Engineer

Each Nuclear Watch Engineer is responsible for overseeing the on-the-job training for the on-shift portions of the Nuclear Plant Operator, Nuclear Operating Supervisor and Nuclear Auxiliary Operator training forms. This includes conducting critical system checkouts for NRC Operator License candidates and documenting satisfactorily performed reactor startups and reactivity manipulations.

3.1.1.4 Program Documentation

The Nuclear Training Specialist is responsible for maintaining the training record of each individual assigned to the operations group. Each training record should contain the following documentation as appropriate:

Documentation

General Employee Training

GET-1, PNPS General Employee Training Form

(with written quiz, if administered)

GET-2, PNPS General Employee Retraining Form

(with written quiz, if administered)

Initial Group Training (As Applicable)

G-3, PNPS Employee Experience Record

0-1, Operations Group Training General Indoctrination

0-2, Nuclear Plant Operators

0-3A, Nuclear Operations Supervisors

0-3B, Nuclear Watch Engineers

0-4, Senior Reactor Operator

0-5, Nuclear Auxiliary Operator

0-6, Fuel Handlers

NRC Licensed Operator Training Program

Documentation

G-5, PNPS training forms

Copies of all quizzes administered

0-7, PNPS Oral Examination Summary Report

0-8, PNPS SRO, Limited to Fuel Handling, Oral Examination
Report

Copy of final simulated NRC written exam

Copy of NRC Operator License Application

Requalification Training

To be covered in Section 3.1.2.4.

PNPS
OPERATIONS TRAINING GROUP
GENERAL INDOCTRINATION

Name _____ Social Security # _____

Complete an indoctrination on the procedures and instructions which are applicable to the Operations Group that implement the Quality Assurance Program. This indoctrination will include the following:

- | | | |
|-----|----------|---|
| 1. | 1.1.1 | Station Organization Responsibilities |
| 2. | 1.2.1 | Operations Review Committee |
| 3. | 1.3.2 | Special Orders |
| 4. | 1.3.4 | Procedures |
| 5. | 1.3.6 | Adherence to Technical Specifications |
| 6. | 1.3.7 | Records |
| 7. | 1.3.8 | Document Control |
| 8. | 1.3.9* | Reports |
| 9. | 1.3.13 | Plant Design Changes |
| 10. | 1.3.23* | Preparation of Safety Evaluation |
| 11. | 1.3.24 | Failure and Malfunction Reports |
| 12. | 1.3.26* | Response to Deficiency Reports |
| 13. | 1.3.34 | Conduct of Operations |
| 14. | 1.4.5 | PNPS Tagging Procedure |
| 15. | 1.4.6 | Housekeeping |
| 16. | 1.5.3 | Maintenance Request |
| 17. | 1.5.7 | Unplanned Emergency Maintenance |
| 18. | 1.5.9 | Jumper System (Temporary Modifications) |
| 19. | 3.M.1-1* | Preventive Maintenance |
| 20. | 3.M.1-5 | Procurement of Items and Services |
| 21. | 3.M.1-8* | Disposition of Non-Conforming Material |
| 22. | 8.1 | Periodic Surveillance Tests |

Requirements Satisfied: a) 10CFR50, Appendix B
b) ANSI N18.7
c) BEQAM, Volume II

Date Completed	Signature, Day Watch Engineer
Date	Signature, Nuclear Training Specialist
Date	Senior Nuclear Training Specialist

Return the completed form to the Training Department.

*Management Only

PNPS
Qualification Requirements for
Nuclear Plant Operator

Name _____

A. Prior to NRC Licensed Operator Training

1. Meet all "qualifications" specified in the Nuclear Plant Operator "job qualification," Regulatory Guide 1.8 and PNPS Procedure #1.3.14.

Date Certified

Signature, Day Watch Engineer

- Requirements Satisfied:
- a) Regulatory Guide 1.8 (ANSI N18.1, Section 4.5.1)
 - b) "Nuclear Plant Operator" Job Specification

2. Complete Form 0-1
Operations Group Training
General Indoctrination

Date

Signature, Nuclear Training Specialist
or Day Watch Engineer

3. Demonstrate the ability to safely and correctly tag equipment out, as per procedure #1.4.5.

Date

Signature, Nuclear Training Specialist
or Day Watch Engineer

4. Demonstrate the ability to read and record supplementary operating log data,

Date

Signature, Nuclear Watch Engineer,
Day Watch Engineer or
Nuclear Training Specialist

5. Demonstrate the ability to operate, read (and record) radiation detection instruments including:

a. PIC-6A

Date

Initials, Instructor

b. PRM-4A

Date

Initials, Instructor

c. Telectector _____
 Date Initials, Instructor

d. RO-2A _____
 Date Initials, Instructor

 Date Signature, Nuclear Watch Engineer
 or Nuclear Training Specialist

6. Demonstrate the ability to perform necessary decontamination activities as required.

 Date Signature, Nuclear Watch Engineer
 or Nuclear Training Specialist

7. Demonstrate the ability to perform routine operating maintenance on equipment and instruments.

 Date Signature, Nuclear Watch Engineer
 or Nuclear Training Specialist

8. Demonstrate the ability to satisfactorily perform a Nuclear Plant operation tour as outlined in PNPS General Plant Operating Procedure #2.1.16 (Oper #8).

 Date Signature, Nuclear Watch Engineer
 or Nuclear Training Specialist

B. N&C Licensed Operator Training

1. Successfully complete the NRC licensing preparatory course within first enrollment.

Course Average _____

Hours _____

 Date Signature, Nuclear Training Specialist

2. Candidate must be knowledgeable of the systems safety function, design basis, major components, surveillance requirements, significant instrumentation setpoints, interlocks and modes of operation. Candidate must also be knowledgeable of normal operating procedures, safety-related procedures and the Technical Specifications governing the system.

<u>SYSTEM</u>	<u>DATE</u>	<u>SIGNATURE, NUCLEAR WATCH ENGINEER OR NUCLEAR TRAINING SPECIALIST</u>
a. Reactor Vessel & Internals	_____	_____
b. Fuel	_____	_____
c. Reactor Vessel Instrumentation	_____	_____
d. C.R.D. including C.R.D. hydraulics RPIS & Reactor Manual Control System	_____	_____
e. Recirculation & Flow Control	_____	_____
f. Reactor Water Cleanup	_____	_____
g. Nuclear Instrumentation -- Including SRM, LRM, LPRM, APRM, RBM & TIP System	_____	_____
h. Rod Worth Minimizer	_____	_____
i. Main Steam	_____	_____
j. Turbine L.O. System	_____	_____
k. Generator & Auxiliaries	_____	_____
l. Turbine Control System	_____	_____
m. Feed & Condensate System	_____	_____
n. Reactor Vessel Water Level Control	_____	_____

	<u>SYSTEM</u>	<u>DATE</u>	<u>SIGNATURE, NUCLEAR WATCH ENGINEER OR NUCLEAR TRAINING SPECIALIST</u>
o.	AC Distribution	_____	_____
p.	Diesel Gen. & Emerg. Power Distribution	_____	_____
q.	D.C. Distribution	_____	_____
r.	Reactor Protection System	_____	_____
s.	Pri. & Secondary Containment	_____	_____
t.	Standby Liquid Control	_____	_____
u.	RHR System	_____	_____
v.	Core Spray	_____	_____
w.	HPCI	_____	_____
x.	Reactor Core Isolation Cooling	_____	_____
y.	A.D.S.	_____	_____
z.	Salt Water Sys.	_____	_____
aa.	Salt service Water	_____	_____
bb.	TBCCW	_____	_____
cc.	RBCCW	_____	_____
dd.	Fire Protection System	_____	_____
ee.	Compress ^{ed} Air System	_____	_____

SIGNATURE, NUCLEAR WATCH ENGINEER
OR NUCLEAR TRAINING SPECIALIST

SYSTEM

DATE

ff. Standby Gas Treatment System _____

g. Augmented Off Gas System _____

hh. Process Radiation Monitoring _____

ii. Area Radiation Monitoring _____

jj. Refueling Equipment & Procedures _____
Also covered will be the March
8, 1980 Refuel incident (see Pg.
#40 of this manual)

- 3. Participate in the manipulation of reactor plant controls during day-to-day operation at least six (6) months. Applicant has three (3) months training on shift as an extra person in the control room.

Date

Signature, Day Watch Engineer

- Requirements Satisfied:
- (a) 10CFR55.10a (6)
 - (b) Regulatory Guide 1.8
(ANSI N18.1, Section 5.2.2)
 - (c) OLB Guide #3
 - (d) NRC letter from H. Denton
of March 28, 1980

- 4. Complete one of the following:

- A. Manipulate the controls of the reactor during two training startups

Date

Signature, Nuclear Watch Engineer

Date

Signature, Nuclear Watch Engineer

- B. Satisfactorily complete an NRC approved training program of at least one week duration at a nuclear power plant simulator (attach certification).

Simulator Used

Dates at Simulator

Date

Signature, Nuclear Training Specialist

- Requirements Satisfied: (a) 10CFR55.10a (6)
 (b) Regulatory Guide 1.8
 (ANSI N18.1, Section 5.2.2)
 (c) OLB Guide #3

5. Participate in at least five significant reactivity changes. (Refer to Section 3.1.2A.1.3 for approved reactivity manipulations)

<u>Reactivity Manipulation #</u>	<u>Date</u>	<u>Signature, Nuclear Watch Engineer</u>

<u>Reactivity Manipulation #</u>	<u>Date</u>	<u>Signature, Nuclear Watch Engineer</u>

<u>Reactivity Manipulation #</u>	<u>Date</u>	<u>Signature, Nuclear Watch Engineer</u>

<u>Reactivity Manipulation #</u>	<u>Date</u>	<u>Signature, Nuclear Watch Engineer</u>

<u>Reactivity Manipulation #</u>	<u>Date</u>	<u>Signature, Nuclear Watch Engineer</u>

- Requirements Satisfied: (a) 10CFR55.10a (6)
 (b) Regulatory Guide 1.8
 (ANSI N18.1, Section 5.2.2)
 (c) OLB Guide #3

C. After completing assigned training, demonstrate satisfactory knowledge in the following areas:

1. Principles of Nuclear Power Plant Operation Quiz Grade

2. Fundamentals of Thermodynamics, Heat Transfer and fluid flow Quiz Grade

3. Plant systems design, including safety and emergency systems Quiz Grade

4. Instrumentation and controls

Quiz Grade

5. Procedures - Normal, abnormal, emergency and radiological control

Quiz Grade

Overall Average _____

NOTE: The applicants must obtain an overall average of 80% and 70% per section.

- Requirements Satisfied:
- (a) Regulatory Guide 1.8 (ANSI N1.8.1, Section 5.2.1)
 - (b) 10CFR55.21
 - (c) OLB Guide #1, Section E
 - (d) NRC letter from H. Denton of March 28, 1980

D. Evaluation

1. Successfully complete an NRC Simulated Oral Examination administered by the Nuclear Training Specialist (attach Form 0-7) Note: This evaluation may be conducted by an independent consultant. In this case their evaluation form may replace Form 0-7.

Point Average
from Form 0-7
(if used)

Date passed

Signature, Nuclear Training Specialist

2. Successfully complete a NRC Simulated written examination Note: This examination may be administered by an independent consultant.

<u>Category</u>	<u>Grade</u>
1. Principles of Nuclear Power Plant Operation	_____
2. Fundamentals of Thermodynamics, heat transfer and fluid flow	_____
3. Plant systems design, including safety and emergency systems	_____
4. Instrumentation and controls	_____
5. Procedures-Normal, abnormal and radiological control	_____

(Note: Passing Grade is 80% overall and 70%/section)

Overall Grade _____

Date Passed Signature, Nuclear Training Specialist

3. Recommended for NRC Examination

Date Signature, Nuclear Training Specialist

Date Signature, Senior Nuclear Training Specialist

Date Signature, Nuclear Operations Manager

- Requirements Satisfied:
- (a) Regulatory Guide 1.8
 - (b) (ANSI N18.1, Section 5.5)
 - (c) NRC letter from H. Denton of March 28, 1980

E. License Issued

License Number _____

Date Issued _____

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PNPS
Qualification Requirements for Nuclear Operating Supervisor

Name _____

1. Meet all qualifications specified in job specification.

_____ Date

Signature, Day Watch Engineer or
Chief Operating Engineer

2. Demonstrate the ability to perform job-related surveillance tests and inspections.

_____ Date

Signature, Day Watch Engineer or
Chief Operating Engineer

3. Form 0-2 or Form 0-4 completed.

_____ Date

Signature, Nuclear Training Specialist

4. Qualification as Emergency Director certified complete.
Form S-1 complete.

_____ Date

Signature, Nuclear Training Specialist

5. Qualification as Nuclear Operating Supervisor certified complete.

_____ Date

Signature, Day Watch Engineer or
Chief Operating Engineer

_____ Date

Signature, Nuclear Training Specialist

_____ Date

Signature, Sr. Nuclear Training Specialist

PNPS
Qualification Requirements for Nuclear Watch Engineer

Name _____

1. Meet all qualifications specified in job specification.

_____ Date _____ Signature, Day Watch Engineer or
Chief Operating Engineer

2. Form 0-4 completed.

_____ Date _____ Signature, Nuclear Training Specialist

3. Demonstrate the ability to perform job-related surveillance tests and inspections.

_____ Date _____ Signature, Nuclear Training Specialist

4. Qualification as Emergency Director certified complete.
Form S-1 complete.

_____ Date _____ Signature, Nuclear Training Specialist

5. Qualification as Nuclear Watch Engineer certified complete.

_____ Date _____ Signature, Day Watch Engineer or
Chief Operating Engineer

_____ Date _____ Signature, Nuclear Training Specialist

_____ Date _____ Signature, Sr. Nuclear Training Specialist

Qualification Requirements for Senior Reactor Operator

Name _____

NRC Operators License Number _____ Date Issued _____

(Note: The SRO applicant shall have held an NRC Operators License for one year)

NRC Licensed Senior Operator Training

1. Successfully complete all NRC Licensed Operator licensing requirements specified in the "Qualification Requirements for Nuclear Plant Operator," (Form 0-2).

Date CertifiedSignature, Nuclear Training Specialist

2. After completing assigned training, demonstrate satisfactory knowledge in the following areas:

1. Theory of Nuclear power plant operation

Quiz Grade

2. Theory of fluids and thermodynamics

Quiz Grade

3. Plant systems design, control and instrumentation

Quiz Grade

4. Procedures-normal, abnormal, emergency and radiological control

Quiz Grade

5. Administrative Procedures, Conditions and Limitations

Quiz Grade

- g. Overall Average _____
 Note: Passing score is 80% overall and 70%
 per section.

- Requirements Satisfied: (a) Regulatory Guide 1.8
 (ANSI N18.1, Section 5.2.1)
 (b) 10CFR55.22
 (c) OLB Guide #1, Section E
 (d) NRC letter from H. Denton
 of March 28, 1980

 Date Signature, Nuclear Training Specialist

3. Evaluation

- a. Successfully complete an NRC Simulated Oral
 Examination (attach Form 0-7)

Note: This examination may be administered by an
 independent consultant. Their form maybe
 used in place of Form 0-7.

 Point Average Grade from
 Form 0-7

 Date Signature, Nuclear Training Specialist

(Note: Passing grade is a point average grade of 3.0)

- b. Successfully complete the senior portion of an
 NRC simulated written examination.

<u>Category</u>	<u>Grade</u>
1. Theory of Nuclear Power plant operation.	_____
2. Theory of fluids and thermodynamics	_____
3. Plant systems design, control and instrumen- tation.	_____
4. Procedures - normal, abnormal, emergency and radiological control	_____

5. Administrative Procedures, Conditions and Limitations _____

(Note: Passing grade, 80% overall, 70%/section)

Overall Average _____

Note: This examination may be administered by an independent consultant.

Date Passed

Signature, Nuclear Training Specialist

- Requirements Satisfied:
- (a) Regulatory Guide 1.8 (ANSI N18.1, Section 5.5)
 - (b) NRC letter from H. Denton of March 28, 1980

c. Recommended for NRC SRO Examination

Date

Signature, Nuclear Training Specialist

Date

Signature, Sr. Nuclear Training Specialist

Date

Signature, Nuclear Operations Manager

4. Successfully complete the NRC Senior Reactor Operator Examination.

License Number Issued _____ Date _____

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QUALIFICATION REQUIREMENTS
FOR
NUCLEAR AUXILIARY OPERATOR (N.A.O.)

NAME _____ SOCIAL SECURITY NUMBER _____

DATE COMPLETE

1. GENERAL TRAINING

- a. G.E.T.
- b. Form O-1
- c. Plant Familiarization
- d. Mathematics
- e. Health Physics
- f. Effective Communications

2. POWER PLANT FUNDAMENTALS

- a. Reactor Plant Technology
- b. Introduction to Plant Electrical
- c. Measurement of Process Variables
- d. Piping Systems and Components
- e. Water Chemistry
- f. Principles of Water Treatment

3. BASIC NUCLEAR PHYSICS

- a. Nuclear Heat Source
- b. Flow of Fluids
- c. Physical Processes

DATE COMPLETED

4. POSITION TRAINING

a. Demonstrate an ability to operate the following systems by satisfactorily completing an oral examination with the Radwaste Supervisor:

- 1. Procedure 2.1.17 _____
- 2. Procedure 2.2.33 _____
- 3. Procedure 2.2.71 _____
- 4. Procedure 2.2.83 _____
- 5. Procedure 2.2.115 _____
- 6. Procedure 6.9-160 _____
- 7. Procedure 2.2.117 _____
- 8. Chem Nuclear Procedures for Dewatering and use of High Integrity Containers _____
- 9. Procedure 2.2.127 _____
- 10. Procedure 7.9.2 _____
- 11. Procedure 7.3.13 _____
- 12. Survey Procedures 8.C.25 _____
- 13. Procedure TP-82-48 _____

b. Demonstrate the ability to complete the following listed forms to the satisfaction of the Radwaste Supervisor:

- 1. Form CH-11 _____
- 2. Oper-24 _____
- 3. Oper-22 _____
- 4. Oper-28A _____
- 5. Oper-28B _____
- 6. Oper-23A _____

DATE COMPLETED

- 7. Oper-28C _____
- 8. Attachment "A" to Procedure 2.2.117 _____
- 9. Attachment "B" to Procedure 2.2.117 _____
- 10. Oper-40 _____
- 11. Survey Form 8.C.25A _____
- 12. Attachment "1A" to TP-82-48 _____
- 13. Attachment "2A" to TP 82-48 _____
- c. Shipping of radioactive material (79-19) _____
- d. Satisfy all requirements as specified in the N.A.O. Job Specification _____

5. EXAMINATIONS

- a. Satisfactorily complete a comprehensive written exam approve by a Senior Nuclear Training Specialist.
Grade _____ Date _____
- b. Satisfactorily complete a comprehensive oral examination with the Radwaste Supervisor.
Grade _____ Date _____

6. RECOMMENDED FOR QUALIFICATION AS A NUCLEAR AUXILIARY OPERATOR

- a. Radwaste Supervisor: Signature _____ Date _____
- b. Senior Nuclear Training Specialist
Signature _____ Date _____

7. QUALIFIED AS A NUCLEAR AUXILIARY OPERATOR

- a. Operations Training Supervisor
Signature _____ Date _____

PNPS

Qualification Requirements for Fuel Handlers,
Limited SRO License Holders

Name _____

- 1. Complete Form 0-1, the Operations Group Training Checklist.

_____ Date _____ Signature, Nuclear Training Specialist or Day Watch Engineer

- 2. Successfully complete a fuel handler training program emphasizing the theoretical and practical aspects of fuel handling. This program will also cover the March 8, 1980 refuel incident as referenced on Pg. #40 on this manual.

Course Grade _____

Hours _____

_____ Date _____ Signature, Nuclear Training Specialist

- 3. Participate in the following on-the-job training:
 - a. Perform three dummy fuel assembly manipulations

_____ Date _____ Signature, Nuclear Training Specialist or Nuclear Watch Engineer

_____ Date _____ Signature, Nuclear Training Specialist or Nuclear Watch Engineer

_____ Date _____ Signature, Nuclear Training Specialist or Nuclear Watch Engineer

- b. Demonstrate the ability to perform job related surveillance tests and inspections.

_____ Date _____ Signature, Nuclear Training Specialist or Nuclear Watch Engineer

4. After completing assigned training, demonstrate satisfactory knowledge in the following areas:

- A. Reactor and Fuel Characteristics
- B. Equipment and Instrumentation Description and Design
- C. Procedures and Limitations, including refuel procedures.
- D. Emergency Systems and Safety Devices
- E. Health Physics and Radiation Protection

Date

Signature, Nuclear Training Specialist

5. Evaluation

- a. Successfully complete an NRC Simulated SRO, Limited to Fuel Handling, oral examination (attach Form 0-8).

Grade _____ (Average Point Value from Form 0-8)

Date

Signature, Nuclear Training Specialist

(Note: Passing Grade - Average Point Value of 3.0)

Note: An independent consultant may be used for this evaluation. Their form may replace Form 0-8.

- b. Successfully complete an NRC Simulated SRO, Limited to Fuel Handling, written examination.

<u>Category</u>	<u>Grade</u>
Reactor and Fuel Characteristics	_____
Equipment and Instrumentation	_____
Descriptions and Designs	_____
Procedures and Limitations	_____
Emergency Systems and Safety Devices	_____
Health Physics and Radiation Protection	_____
Thermodynamics	_____
Overall	_____

(Note: Passing Grade 80% overall, 70%/Section)
 An independent consultant may administer this examination.

 Date Signature, Nuclear Training Specialist

- c. Recommended for NRC Examination

 Date Signature, Nuclear Training Specialist

 Date Signature, Senior Nuclear Training Specialist

 Date Signature, Nuclear Operations Manager

- 6. Successfully complete the NRC Senior Reactor Operator, Limited to Fuel Handling, examination.

License Number Issued _____ Date _____

PNPS
Oral Examination
Summary Report

- I. Candidate's Name _____ Date _____
 Job Title _____
 License Level (check one) SRO _____ RO _____ None _____
- II. Reason for Examination (check one)
- A _____ Annual Requalification Examination
 B _____ Initial License Candidate
 C _____ Candidate for Upgrade from RO to SRO
 D _____ Accelerated Training
 E _____ Other, Explain _____
- III. Instructions to Examiner
- A. Rate the candidates performance for each section of the examination. The levels of performance and point values are:
- 5 - Excellent
 4 - Above Average
 3 - Average
 2 - Below Average
 1 - Poor
- B. The comments section shall be completed for all sections graded Below Average (3).
- C. Upon completion of the examination the candidates points will be totaled and an average computed, based upon the number of questions asked.
 A grade of less than 3.0 will require that the candidate either be removed from license duties or not be approved for the NRC examination.
- D. All sections of this oral examination need not be used.

IV. Oral Examination Report

- 1.0 Operating Demonstration
- 1.1 Pre-Startup and Instrumentation Checks (List Procedure Used)

-
- 1.1.1 Purpose
 - 1.1.2 Automatic Actions
 - 1.1.3 Instrumentation Setpoints

- 1.1.4 Understanding
- 1.2 Console Operation (905)

- 1.2.1 Manipulations

- 1.2.2 Understanding

- 1.2.3 Instrumentation

- 1.2.3.1 Setpoints

- 1.2.3.2 Automatic Actions

Comments: _____

- 2.0 Facility Systems Control Room (List Systems Discussed)

- 2.1 Major Systems

- 2.1.1 List System Discussed

- 2.1.1.1 Purpose

- 2.1.1.2 Flow Path

- 2.1.1.3 Major Components Location

- 2.1.1.4 Instrumentation Location

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1.1.1					
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1.1.3					
1.1.4					
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1.2.1					
1.2.2					
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1.2.3.1					
1.2.3.2					
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2.1.1.1					
2.1.1.2					
2.1.1.3					
2.1.1.4					
Sub-Totals This Page					

2. (continued)

- 2.1.1.5 Instrument Setpoints
- 2.1.1.6 Automatic Actions
- 2.1.1.7 Manual Operation

Comments _____

2.2 Major Systems (Contd.)

- 2.1.1 List System Discussed
- 2.2.1.1 Purpose
- 2.2.1.2 Flow Path
- 2.2.1.3 Major Components Location
- 2.2.1.4 Instrumentation Location
- 2.2.1.5 Instrument Setpoints
- 2.2.1.6 Automatic Actions
- 2.2.1.7 Manual Operation

Comments _____

2.3 Major Systems (Contd.)

- 2.3.1 List System Discussed
- 2.3.1.1 Purpose
- 2.3.1.2 Flow Path
- 2.3.1.3 Major Components Location
- 2.3.1.4 Instrumentation Location

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2.1.1.5					
2.1.1.6					
2.1.1.7					
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2.2.1.1					
2.2.1.2					
2.2.1.3					
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2.3.1.1					
2.3.1.2					
2.3.1.3					
2.3.1.4					
Sub-Totals					
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		5	4	3	2	1
2.3.1.5	Instrument Setpoints	2.3.1.5				
2.3.1.6	Automatic Actions	2.3.1.6				
2.3.1.7	Manual Operation	2.3.1.7				
Comments	_____	*****	**	**	**	**
	_____	*****	**	**	**	**
	_____	*****	**	**	**	**
	_____	*****	**	**	**	**
2.4	Auxiliary Systems -- Control Room	*****	**	**	**	**
2.4.1	<u>List System Discussed</u>	*****	**	**	**	**
2.4.1.1	Purpose	2.4.1.1				
2.4.1.2	Flow Path	2.4.1.2				
2.4.1.3	Major Components Location	2.4.1.3				
2.4.1.4	Instrumentation Location	2.4.1.4				
2.4.1.5	Instrument Setpoints	2.4.1.5				
2.4.1.6	Automatic Actions	2.4.1.6				
2.4.1.7	Manual Operation	2.4.1.7				
Comments	_____	*****	**	**	**	**
	_____	*****	**	**	**	**
	_____	*****	**	**	**	**
	_____	*****	**	**	**	**
2.5	Auxiliary Systems (cont)	*****	**	**	**	**
2.5.1	<u>List System Discussed</u>	*****	**	**	**	**
2.5.1.1	Purpose	2.5.1.1				
2.5.1.2	Flow Path	2.5.1.2				
2.5.1.3	Major Components Location	2.5.1.3				
2.5.1.4	Instrumentation Location	2.5.1.4				
Sub-Totals						
This Page						

		5	4	3	2	1
2.5.1.5	Instrument Setpoints	2.5.1.5				
2.5.1.6	Automatic Actions	2.5.1.6				
2.5.1.7	Manual Operation	2.5.1.7				
Comments		* * * * *	* *	* *	* *	* * *
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2.6	Auxiliary Systems(cont)	* * * * *	* *	* *	* *	* * *
2.6.1	<u>List System Discussed</u>	* * * * *	* *	* *	* *	* * *
2.6.1.1	Purpose	2.6.1.1				
2.6.1.2	Flow Path	2.6.1.2				
2.6.1.3	Major Components	2.6.1.3				
2.6.1.4	Location	2.6.1.4				
2.6.1.5	Instrumentation	2.6.1.5				
2.6.1.6	Location	2.6.1.6				
2.6.1.7	Instrument Setpoints	2.6.1.7				
2.6.1.8	Automatic Actions	2.6.1.8				
2.6.1.9	Manual Operation	2.6.1.9				
Comments		* * * * *	* *	* *	* *	* * *
		* * * * *	* *	* *	* *	* * *
		* * * * *	* *	* *	* *	* * *
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3.0	Instrumentation (List Systems Discussed)	* * * * *	* *	* *	* *	* * *
3.1	Nuclear Instrumentation	* * * * *	* *	* *	* *	* * *
3.1.1	<u>List System Discussed</u>	* * * * *	* *	* *	* *	* * *
3.1.1.1	Purpose	3.1.1.1				
3.1.1.2	Location	3.1.1.2				
3.1.1.3	Setpoints	3.1.1.3				
	Sub-Totals					
	This Page					

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3.1.1.4	Automatic Actions					
Comments		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
3.2	Nuclear Instrumentation (Contd)	*****	**	**	**	**
3.2.1	List System Discussed	*****	**	**	**	**
3.2.1.1	Purpose	3.2.1.1				
3.2.1.2	Location	3.2.1.2				
3.2.1.3	Setpoints	3.2.1.3				
3.2.1.4	Automatic Actions	3.2.1.4				
Comments		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
3.3	Process Instrumentation	*****	**	**	**	**
3.3.1	List System Discussed	*****	**	**	**	**
3.3.1.1	Purpose	3.3.1.1				
3.3.1.2	Location	3.3.1.2				
3.3.1.3	Setpoints	3.3.1.3				
3.3.1.4	Automatic Actions	3.3.1.4				
Comments		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
3.4	Process Instrumentation (Contd)	*****	**	**	**	**
	Sub-Totals					
	This Page					

		5	4	3	2	1
3.4.1	<u>List System Discussed</u>					
3.4.1.1	Purpose	3.4.1.1				
3.4.1.2	Location	3.4.1.2				
3.4.1.3	Setpoints	3.4.1.3				
3.4.1.4	Automatic Actions	3.4.1.4				
Comments		* * * * *	* *	* *	* *	* * *
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4.0	Procedures (List					
	Procedures Discussed)					
4.1	Normal Procedures	* * * * *	* *	* *	* *	* * *
4.1.1	<u>List Procedure Discussed</u>					
4.1.1.1	Purpose	4.1.1.1				
4.1.1.2	Manual Operation	4.1.1.2				
4.1.1.3	Automatic Operation	4.1.1.3				
4.1.1.4	Equipment Location	4.1.1.4				
4.1.1.5	Instrumentation Location	4.1.1.5				
Comments		* * * * *	* *	* *	* *	* * *
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4.2	Normal Procedures	* * * * *	* *	* *	* *	* * *
	(Contd)	* * * * *	* *	* *	* *	* * *
4.2.1	<u>List Procedure Discussed</u>					
4.2.1.1	Purpose	4.2.1.1				
4.2.1.2	Manual Operation	4.2.1.2				
4.2.1.3	Automatic Operation	4.2.1.3				
4.2.1.4	Equipment Location	4.2.1.4				
	Sub-Totals					
	This Page					

Comments _____

- 4.4 Abnormal Procedures
 - 4.4.1 List Procedure Discussed
 - 4.4.1.1 Symptoms
 - 4.4.1.2 Alarms Received
 - 4.4.1.2.1 Alarm Location
 - 4.4.1.2.2 Alarm Setpoints
 - 4.4.1.3 Automatic Actions
 - 4.4.1.4 Immediate Operator Actions
 - 4.4.1.5 Subsequent Operator Actions
 - 4.4.1.6 Discussion of Problem

Comments _____

- 4.5 Abnormal Procedures
 - 4.5.1 List Procedures Discussed
 - 4.5.1.1 Symptoms
 - 4.5.1.2 Alarms Received
 - 4.5.1.2.1 Alarm Location
 - 4.5.1.2.2 Alarm Setpoints
 - 4.5.1.3 Automatic Actions
 - 4.5.1.4 Immediate Operator Actions
 - 4.5.1.5 Subsequent Operator Actions

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4.4.1.1					
4.4.1.2					
4.4.1.2.1					
4.4.1.2.2					
4.4.1.3					
4.4.1.4					
4.4.1.5					
4.4.1.6					
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*****	**	**	**	**	***
4.5.1.1					
4.5.1.2					
4.5.1.2.1					
4.5.1.2.2					
4.5.1.3					
4.5.1.4					
4.5.1.5					
Sub-Totals This Page					

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4.5.1.6	Discussion of Problem	4.5.1.6				
Comments		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
4.6	Abnormal Procedures	*****	**	**	**	**
4.6.1	List Procedure Discussed	*****	**	**	**	**
4.6.1.1	Symptoms	4.6.1.1				
4.6.1.2	Alarms Received	4.6.1.2				
4.6.1.2.1	Alarm Location	4.6.1.2.1				
4.6.1.2.2	Alarm Setpoints	4.6.1.2.2				
4.6.1.3	Automatic Actions	4.6.1.3				
4.6.1.4	Immediate Operator Action	4.6.1.4				
4.6.1.5	Subsequent Operator Action	4.6.1.5				
4.5.1.6	Discussion of Problem	4.6.1.6				
Comments		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
4.7	Emergency Procedures	*****	**	**	**	**
4.7.1	List Procedure Discussed	*****	**	**	**	**
4.7.1.1	Symptoms	4.7.1.1				
4.7.1.2	Alarms Received	4.7.1.2				
4.7.1.2.1	Alarm Location	4.7.1.2.1				
4.7.1.2.2	Alarm Setpoints	4.7.1.2.2				
4.7.1.3	Automatic Action	4.7.1.3				
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		5	4	3	2	1
4.7.1.4	Immediate Operator Actions	4.7.1.4				
4.7.1.5	Subsequent Operator Actions	4.7.1.5				
4.7.1.6	Discussion of Problem	4.7.1.6				
Comment		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
4.8	Emergency Procedures	*****	**	**	**	**
4.8.1	List Procedure Discussed	*****	**	**	**	**
4.8.1.1	Symptoms	4.8.1.1				
4.8.1.2	Alarms Received	4.8.1.2				
4.8.1.2.1	Alarm Location	4.8.1.2.1				
4.8.1.2.2	Alarm Setpoints	4.8.1.2.2				
4.8.1.3	Automatic Actions	4.8.1.3				
4.8.1.4	Immediate Operator Actions	4.8.1.4				
4.8.1.5	Subsequent Operator Actions	4.8.1.5				
4.8.1.6	Discussion of Problem	4.8.1.6				
Comments		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
4.9	Emergency Procedures	*****	**	**	**	**
4.9.1	List Procedure Discussed	*****	**	**	**	**
4.9.1.1	Symptoms	4.9.1.1				
4.9.1.2	Alarms Received	4.9.1.2				
4.9.1.2.1	Alarm Location	4.9.1.2.1				
	Sub-Totals This Page					

		5	4	3	2	1
4.9.1.2.2	Alarm Setpoints	4.9.1.2.2				
4.9.1.3	Automatic Actions	4.9.1.3				
4.9.1.4	Immediate Operator Actions	4.9.1.4				
4.9.1.5	Subsequent Operator Actions	4.9.1.5				
4.9.1.6	Discussion of Problem	4.9.1.6				
Comments		*****	**	**	**	***
		*****	**	**	**	***
		*****	**	**	**	***
		*****	**	**	**	***
5.0	Reactivity Effects	*****	**	**	**	***
		*****	**	**	**	***
5.1	Subcritical Effects	5.1				
5.2	Reactivity Coefficients	5.2				
5.3	Xenon/Samarium Effects	5.3				
5.4	Control Rod Effects	5.4				
5.5	Delayed Neutrons	5.5				
Comments		*****	**	**	**	***
		*****	**	**	**	***
		*****	**	**	**	***
		*****	**	**	**	***
6.0	Technical Specifications (List sections Discussed)	*****	**	**	**	***
6.1		6.1				
6.1.1	Bases for 6.1 (SRO's only)	6.1.1				
6.2		6.2				
6.2.1	Bases for 6.2 (SRO's only)	6.2.1				
6.3		6.3				
	Sub-Totals This Page					

6.3.1 Bases for 6.3 (SRO's only)

Comments _____

7.0 Radiation Protection

7.1 Radiation Control Procedures (List Procedures Discussed)

7.1.1 _____
 7.1.2 _____
 7.1.3 _____

Comments _____

7.2 Portable Instruments (List Instruments Discussed)

7.2.1 _____
 7.2.1.1 Detector Type
 7.2.2.2 Use of Instrument
 7.2.2.3 Range of Instrument

Comments _____

7.3 Exposure Limits

	5	4	3	2	1
6.3.1					
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7.0					
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7.1.1					
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7.1.3					
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7.2					
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7.2.1					
7.2.1.1					
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7.3.1	Whole Body					
7.3.1.1	State	7.3.1.1				
7.3.1.2	Federal	7.3.1.2				
7.3.2	Skin	7.3.2				
7.3.3	Extremities	7.3.3				
7.3.4	Admin. Limits	7.3.4				
Comments _____		* * * * *	**	**	**	**
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8.0	Emergency Plan	* * * * *	**	**	**	**
8.1	Activation of	* * * * *	**	**	**	**
8.1.1	Plant	8.1.1				
8.1.2	Site	8.1.2				
8.1.3	General	8.1.3				
8.2	Rapid Survey	* * * * *	**	**	**	**
8.2.1	Equipment Location	8.2.1				
8.2.2	Equipment Usage	8.2.2				
8.3	Emergency Organization	* * * * *	**	**	**	**
8.3.1	Responsibilities	8.3.1				
8.3.2	Notification	8.3.2				
8.4	Environment Monitoring	* * * * *	**	**	**	**
8.4.1	Equipment Location	8.4.1				
8.4.2	Team Responsibilities	8.4.2				
8.4.2.1	Blue Team-Environmental	8.4.2.1				
8.4.2.2	Yellow Team-Onsite Personnel	8.4.2.2				
8.4.2.3	Brown Team-Offsite Personnel	8.4.2.3				
Sub-Totals						
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		5	4	3	2	1
8.4.2.4	Decon Team	8.4.2.4				
8.4.2.5	Re-Entry Team	8.4.2.5				
8.5	Personnel Accountability	8.5				
8.6	MDPH Responsibilities	* * * * *	* *	* *	* *	* * *
8.6.1	Onsite Incidents	8.6.1				
Comments	_____	* * * * *	* *	* *	* *	* * *
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9.0	Station Systems Walk through (List Systems Discussed)	* * * * *	* *	* *	* *	* * *
9.1	List System Discussed	* * * * *	* *	* *	* *	* * *
9.1.1	Purpose	9.1.1				
9.1.2	Location of Components	9.1.2				
9.1.3	Location of Instrumentation	9.1.3				
9.1.4	Flow Paths	9.1.4				
9.1.5	Automatic Response	9.1.5				
9.1.6	Manual Operation	9.1.6				
Comments	_____	* * * * *	* *	* *	* *	* * *
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9.2	List System Discussed	* * * * *	* *	* *	* *	* * *
9.2.1	Purpose	9.2.1				
9.2.2	Location of Components	9.2.2				
9.2.3	Location of Instrumentation	9.2.3				
		Sub-Totals This Page				

11. General overall comments and/or observations

12. Score:

Total Points _____ ÷ number of questions.

Completed _____ = average point value _____

Passed _____ Failed _____ (check one)

Date

Signature, Examiner

13. Examination review:

Date

Signature, Nuclear Training Specialist

Date

Signature, Sr. Nuclear Training Specialist

PNPS
SRO Limited to Fuel Handling
Oral Examination
Summary Report

I. Candidate's Name _____ Date _____
Job Title _____

II. Reason for Examination (check one)

A. _____ Annual Requalification Examination

B. _____ Initial License Candidate

C. _____ Accelerated Training

D. _____ Other, Explain _____

III. Instructions to Examiner

A. Rate the candidates performance for each section of the examination. The levels of performance and point values are:

5 - Excellent

4 - Above Average

3 - Average

2 - Below Average

1 - Poor

B. The comments section shall be completed for all sections graded below average (3).

C. Upon completion of the examination the candidates points will be totaled and an average computed based upon the number of questions asked.

A grade of less than 3.0 will require that the candidate either be removed from license duties or not be approved for the NRC examination.

D. All sections of this Oral Examination need not be used.

IV. Oral Examination Report

- 1.0 Prerequisite for Fuel Handling
- 1.1 Refueling manpower requirements as per proc #4.3 - see VI
- 1.2 SRM Requirements as per TECH specs 3.10
- 1.3 Process radiation monitors for refuel floor - as per Proc #3.2
- 1.4 MBA Transfer forms as per proc #4.0
- 1.5 Health Physics access control as per Proc #4.3 - Appendix A
- 1.6 Fuel Tag Boards

Comments _____

- 1.7 Equipment Requirements as per oper. #10

Comments _____

- 2.0 Manipulations
- 2.1 Refueling Equipment
 - 2.1.1 Refuel Bridge Operation
 - 2.1.1.1 Main Grappel
 - 2.1.1.2 Frame Mounted Hoist
 - 2.1.1.3 Monorail Mounted Hoist
 - 2.1.2 Jib Crane Operation

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1.7					
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2.0					
2.1					
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2.1.1.1					
2.1.1.2					
2.1.1.3					
2.1.2					
Sub-Totals This Page					

2.1.3 Service Platform
 Comments _____

- 3.0 Fuel
- 3.1 New Fuel Assembly
- 3.1.1 Shipment of
- 3.1.2 Unloading of
- 3.1.3 Inspection of
- 3.1.4 Channeling of
- 3.1.5 Storage of

Comments _____

- 3.2 Fuel Bundle Construction
- 3.2.1 Tie Plates
- 3.2.2 Fuel Rods
- 3.2.3 Fuel Pellets
- 3.2.4 Channels
- 3.2.5 Channel Fasteners
- 3.2.6 Proper Orientation

Comments _____

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2.1.3					
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3.1.1					
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3.2.1					
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Sub-Totals					
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- 3.3 Irradiated Fuel
- 3.3.1 Handling of
- 3.3.2 Precautions
- 3.3.3 Storage of

Comments _____

- 3.4 Fuel Movement
- 3.4.1 MBA Forms
- 3.4.1.1 Responsibilities
- 3.4.2 Tag Boards

Comments _____

- 4.0 Refuel Interlocks
- 4.1 Tech Specs Basis of
- 4.2 List Interlocks Discussed
- 4.2.1 _____
- 4.2.2 _____
- 4.2.3 _____
- 4.2.4 _____
- 4.2.5 _____
- 4.2.6 _____
- 4.2.7 _____
- 4.2.8 _____

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3.3.1					
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3.4.1					
3.4.1.1					
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4.1					
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4.2.1					
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4.2.8					
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4.2.9	_____					
4.2.10	_____					
Comments	_____	*****	**	**	**	**
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5.0	Facility Systems - Control Room (List Systems Discussed)	*****	**	**	**	**
5.1	Major Systems	*****	**	**	**	**
5.1.1	List Systems Discussed	*****	**	**	**	**
5.1.1.1	Purpose					
5.1.1.2	Flow Path					
5.1.1.3	Major Components Location					
5.1.1.4	Instrumentation Location					
5.1.1.5	Instrument Setpoints					
5.1.1.6	Automatic Actions					
5.1.1.7	Manual Operation					
Comments	_____	*****	**	**	**	**
	_____	*****	**	**	**	**
	_____	*****	**	**	**	**
	_____	*****	**	**	**	**
5.2	Major Systems (contd.)	*****	**	**	**	**
5.2.1	List System Discussed	*****	**	**	**	**
5.2.1.1	Purpose					
5.2.1.2	Flow Path					
5.2.1.3	Major Components Location					
	Sub-Totals This Page					

		5	4	3	2	1
5.2.1.4	Instrumentation Location	5.2.1.4				
5.2.1.5	Instrument Setpoints	5.2.1.5				
5.2.1.6	Automatic Actions	5.2.1.6				
5.2.1.7	Manual Operation	5.2.1.7				
Comments		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
5.3	Major Systems (contd.)	*****	**	**	**	**
5.3.1	List System Discussed	*****	**	**	**	**
5.3.1.1	Purpose	5.3.1.1				
5.3.1.2	Flow Path	5.3.1.2				
5.3.1.3	Major Components Location	5.3.1.3				
5.3.1.4	Instrumentation Location	5.3.1.4				
5.3.1.5	Instrument Setpoints	5.3.1.5				
5.3.1.6	Automatic Actions	5.3.1.6				
5.3.1.7	Manual Operation	5.3.1.7				
Comments		*****	**	**	**	**
		*****	**	**	**	**
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		*****	**	**	**	**
5.4	Auxiliary Systems - Control Room (List Systems Discussed)	*****	**	**	**	**
5.4.1	List System Discussed	*****	**	**	**	**
5.4.1.1	Purpose	5.4.1.1				
5.4.1.2	Flow Path	5.4.1.2				
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		5	4	3	2	1
5.4.1.3	Major Components Location	5.4.1.3				
5.4.1.4	Instrumentation Location	5.4.1.4				
5.4.1.5	Instrument Setpoints	5.4.1.5				
5.4.1.6	Automatic Actions	5.4.1.6				
5.4.1.7	Manual Operation	5.4.1.7				
Comments		*****	**	**	**	**
		*****	**	**	**	**
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		*****	**	**	**	**
5.5	Auxiliary Systems (Cont)	*****	**	**	**	**
5.5.1	<u>List System Discussed</u>	*****	**	**	**	**
5.5.1.1	Purpose	5.5.1.1				
5.5.1.2	Flow Path	5.5.1.2				
5.5.1.3	Major Components Location	5.5.1.3				
5.5.1.4	Instrumentation Location	5.5.1.4				
5.5.1.5	Instrument Setpoints	5.5.1.5				
5.5.1.6	Automatic Actions	5.5.1.6				
5.5.1.7	Manual Operation	5.5.1.7				
Comments		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
		*****	**	**	**	**
5.6	Auxiliary Systems (Cont)	*****	**	**	**	**
5.6.1	<u>List System Discussed</u>	*****	**	**	**	**
5.6.1.1	Purpose	5.6.1.1				
5.6.1.2	Flow Path	5.6.1.2				
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		5	4	3	2	1
5.6.1.3	Major Components Location	5.6.1.3				
5.6.1.4	Instrumentation Location	5.6.1.4				
5.6.1.5	Instrument Setpoints	5.6.1.5				
5.6.1.6	Automatic Actions	5.6.1.6				
5.6.1.7	Manual Operation	5.6.1.7				
Comments	_____	* * * * *	**	**	**	**
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6.0	Instrumentation (List Systems Discussed)	* * * * *	**	**	**	**
6.1	Nuclear Instrumentation	* * * * *	**	**	**	**
6.1.1	<u>List System Discussed</u>	* * * * *	**	**	**	**
6.1.1.1	Purpose	6.1.1.1				
6.1.1.2	Location	6.1.1.2				
6.1.1.3	Setpoints	6.1.1.3				
6.1.1.4	Automatic Actions	6.1.1.4				
Comments	_____	* * * * *	**	**	**	**
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6.2	Nuclear Instrumentation (contd.)	* * * * *	**	**	**	**
6.2.1	<u>List System Discussed</u>	* * * * *	**	**	**	**
6.2.1.1	Purpose	6.2.1.1				
6.2.1.2	Location	6.2.1.2				
6.2.1.3	Setpoints	6.2.1.3				
6.2.1.4	Automatic Actions	6.2.1.4				
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Comments _____

6.3 Process Instrumentation

6.3.1

List System Discussed

6.3.1.1

Purpose

6.3.1.2

Location

6.3.1.3

Setpoints

6.3.1.4

Automatic Actions

Comments _____

6.4 Process Instrumentation
(contd.)

6.4.1

List System Discussed

6.4.1.1

Purpose

6.4.1.2

Location

6.4.1.3

Setpoints

6.4.1.4

Automatic Actions

Comments _____

7.0 Procedures (List
Procedures Discussed)

7.1 Normal Procedures

7.1.1

List Procedure Discussed

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6.4.1.1					
6.4.1.2					
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7.1.1.1	Purpose	7.1.1.1				
7.1.1.2	Manual Operation	7.1.1.2				
7.1.1.3	Automatic Operation	7.1.1.3				
7.1.1.4	Equipment Location	7.1.1.4				
7.1.1.5	Instrumentation Location	7.1.1.5				
Comments		* * * * *	* *	* *	* *	* * *
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7.2	Normal Procedures (Contd.)	* * * * *	* *	* *	* *	* * *
7.2.1	List Procedure Discussed	* * * * *	* *	* *	* *	* * *
7.2.1.1	Purpose	7.2.1.1				
7.2.1.2	Manual Operation	7.2.1.2				
7.2.1.3	Automatic Operation	7.2.1.3				
7.2.1.4	Equipment Location	7.2.1.4				
7.2.1.5	Instrumentation Location	7.2.1.5				
Comments		* * * * *	* *	* *	* *	* * *
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7.3	Normal Procedures (Contd.)	* * * * *	* *	* *	* *	* * *
7.3.1	List Procedure Discussed	* * * * *	* *	* *	* *	* * *
7.3.1.1	Purpose	7.3.1.1				
7.3.1.2	Manual Operation	7.3.1.2				
7.3.1.3	Automatic Operation	7.3.1.3				
7.3.1.4	Equipment Location	7.3.1.4				
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7.3.1.5	Instrument Location	7.3.1.5				
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7.4	Abnormal Procedures	* * * * *	* *	* *	* *	* * *
7.4.1	List Procedure Discussed	* * * * *	* *	* *	* *	* * *
7.4.1.1	Symptoms	7.4.1.1				
7.4.1.2	Alarms Received	7.4.1.2				
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7.4.1.3	Automatic Actions	7.4.1.3				
7.4.1.4	Immediate Operator Actions	7.4.1.4				
7.4.1.5	Subsequent Operator Actions	7.4.1.5				
7.4.1.6	Discussion of Problem	7.4.1.6				
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7.5	Abnormal Procedures	* * * * *	* *	* *	* *	* * *
7.5.1	List Procedure Discussed	* * * * *	* *	* *	* *	* * *
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7.5.1.2	Alarms Received	7.5.1.2				
7.5.1.2.1	Alarm Location	7.5.1.2.1				
7.5.1.2.2	Alarm Setpoints	7.5.1.2.2				
7.5.1.3	Automatic Actions	7.5.1.3				
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7.5.1.4	Immediate Operator Actions	7.5.1.4				
7.5.1.5	Subsequent Operator Actions	7.5.1.5				
7.5.1.6	Discussion of Problem	7.5.1.6				
Comments		*****	**	*	**	**
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7.6	Abnormal Procedures	*****	**	**	**	**
7.6.1	List Procedure Discussed	*****	**	**	**	**
7.6.1.1	Symptoms	7.6.1.1				
7.6.1.2	Alarms Received	7.6.1.2				
7.6.1.2.1	Alarm Location	7.6.1.2.1				
7.6.1.2.2	Alarm Setpoints	7.6.1.2.2				
7.6.1.3	Automatic Actions	7.6.1.3				
7.6.1.4	Immediate Operator Action	7.6.1.4				
7.6.1.5	Subsequent Operator Actions	7.6.1.5				
7.6.1.6	Discussion of Problem	7.6.1.6				
Comments		*****	**	**	**	**
		*****	**	**	**	**
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		*****	**	**	**	**
7.7	Emergency Procedures	*****	**	**	**	**
7.7.1	List Procedure Discussed	*****	**	**	**	**
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7.7.1.4	Immediate Operator Actions	7.7.1.4				
7.7.1.5	Subsequent Operator Actions	7.7.1.5				
7.7.1.6	Discussion of Problem	7.7.1.6				
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7.8	Emergency Procedures	*****	**	**	**	**
7.8.1	<u>List Procedure Discussed</u>	*****	**	**	**	**
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7.8.1.2	Alarms Received	7.8.1.2				
7.8.1.2.1	Alarm Location	7.8.1.2.1				
7.8.1.2.2	Alarm Setpoints	7.8.1.2.2				
7.8.1.3	Automatic Actions	7.8.1.3				
7.8.1.4	Immediate Operator Actions	7.8.1.4				
7.8.1.5	Subsequent Operator Actions	7.8.1.5				
7.8.1.6	Discussion of Problem	7.8.1.6				
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7.9	Emergency Procedures	*****	**	**	**	**
7.9.1	<u>List Procedure Discussed</u>	*****	**	**	**	**
7.9.1.1	Symptoms	7.9.1.1				
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7.9.1.5	Subsequent Operator Actions	7.9.1.5				
7.9.1.6	Discussion of Problem	7.9.1.6				
Comments	_____	*****	**	**	**	***
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		*****	**	**	**	***
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8.2	Reactivity Coefficients	8.2				
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8.5	Delayed Neutrons	8.5				
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	_____	*****	**	**	**	***
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12.1	List System Discussed	* * * * *	* *	* *	* *	* * *
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12.1.2	Location of Components	12.1.2				
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Comments _____

12.2

List System Discussed

- 12.2.1 Purpose
- 12.2.2 Location of Components
- 12.2.3 Location of Instrumentation
- 12.2.4 Flow Paths
- 12.2.5 Automatic Response
- 12.2.6 Manual Operation

Comments _____

12.3

List System Discussed

- 12.3.1 Purpose
- 12.3.2 Location of Components
- 12.3.3 Location of Instrumentation
- 12.3.4 Flow Paths
- 12.3.5 Automatic Response
- 12.3.6 Manual Operation

Comments _____

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13. General overall comments and/or observations

14. Score:

Total Points _____ ÷ Number of questions
 Completed _____ = Average Point Value _____
 Passed _____ Failed _____ (check one)

Date

Signature, Examiner

15. Examination Review:

Date

Signature, Nuclear Training Specialist

Date

Signature, Sr. Nuclear Training Specialist

3.1.2 Operations Group Retraining (Regualification Training)

Regualification training at the Pilgrim Station is divided into two distinct programs. The program specified in section 3.1.2A of this manual, which is referred to as the NRC Licensed Operator Regualification training, applies to Pilgrim Nuclear Plant Operators and Senior Reactor Operators. It satisfies the requirements of 10CFR55, Appendix A, meets the commitments made in the Licensed Operator Regualification program submitted to and approved by the NRC, and the requirements of the letter from Mr. H. Denton, USNRC of March 28, 1980. All licensed staff members will participate in the regualification program to the extent that their normal duties preclude the need for retraining in specific areas.

The program specified in Section 3.1.2B of this manual, which is referred to as the Fuel Handler regualification training, applies only to Fuel Handlers. Fuel handlers participate in a separate regualification since they possess a SRO license limited to fuel handling only.

Non-licensed operators in the Operations Group fall into two categories--either non-licensed nuclear plant operators or Nuclear Auxiliary Operators. Non-licensed Nuclear Plant Operators are required to participate in training required to obtain an NRC license and, as such, do not require nuclear plant operator retraining. Nuclear Auxiliary Operators will participate in retraining as described on Form 0-17 on an annual basis.

3.1.2 Operations Group Retraining (Requalification Training)

Requalification training at the Pilgrim Station is divided into two distinct programs. The program specified in section 3.1.2A of this manual, which is referred to as the NRC Licensed Operator Requalification training, applies to Pilgrim Nuclear Plant Operators and Senior Reactor Operators. It satisfies the requirements of 10CFR55, Appendix A, meets the commitments made in the Licensed Operator Requalification program submitted to and approved by the NRC, and the requirements of the letter from Mr. H. Denton, USNRC of March 28, 1980. All licensed staff members will participate in the requalification program to the extent that their normal duties preclude the need for retraining in specific areas.

The program specified in Section 3.1.2B of this manual, which is referred to as the Fuel Handler requalification training, applies only to Fuel Handlers. Fuel handlers participate in a separate requalification since they possess a SRO license limited to fuel handling only.

Non-licensed operators in the Operations Group fall into two categories--either non-licensed nuclear plant operators or Nuclear Auxiliary Operators. Non-licensed Nuclear Plant Operators are required to participate in training required to obtain an NRC license and, as such, do not require nuclear plant operator retraining. Nuclear Auxiliary Operators will participate in retraining as described on Form 0-17 on an annual basis.

3.1.2A NRC Licensed Operator Requalification Training

3.1.2A.1 Program Description

The NRC Licensed Operator requalification program is conducted by the Nuclear Training Specialist under the cognizance of the Senior Nuclear Training Specialist. The program complies with the requirements of 10CFR55, Appendix A, the commitments made in the Pilgrim requalification program submitted to the NRC, and the requirements set forth by Mr. H. Denton's letter to all power reactor applicants and licensees on March 29, 1980. The overall program schedule is illustrated in Figure 1. The requalification program is conducted for a continuous two-year period, September to September, and upon its conclusion a successive requalification program is initiated.

The formal lecture series consists of topics covered during each of the two lecture periods running from Labor Day of one year until Memorial Day of the following year. Required lecture attendance is determined by administering an annual simulated written NRC examination prior to the start of each lecture period. This exam may be administered by the U.S. NRC as deemed necessary by them, by the PNPS Training Department or by a consultant to the Training Department.

The "PNPS Licensed Operator Requalification Summary" (Form 0-9) summarizes the completion of required training. Note that the form is divided into three sections:

- I. Requalification Program - Year 1
- II. Requalification Program - Year 2
- III. Overall Requalification Program Summary

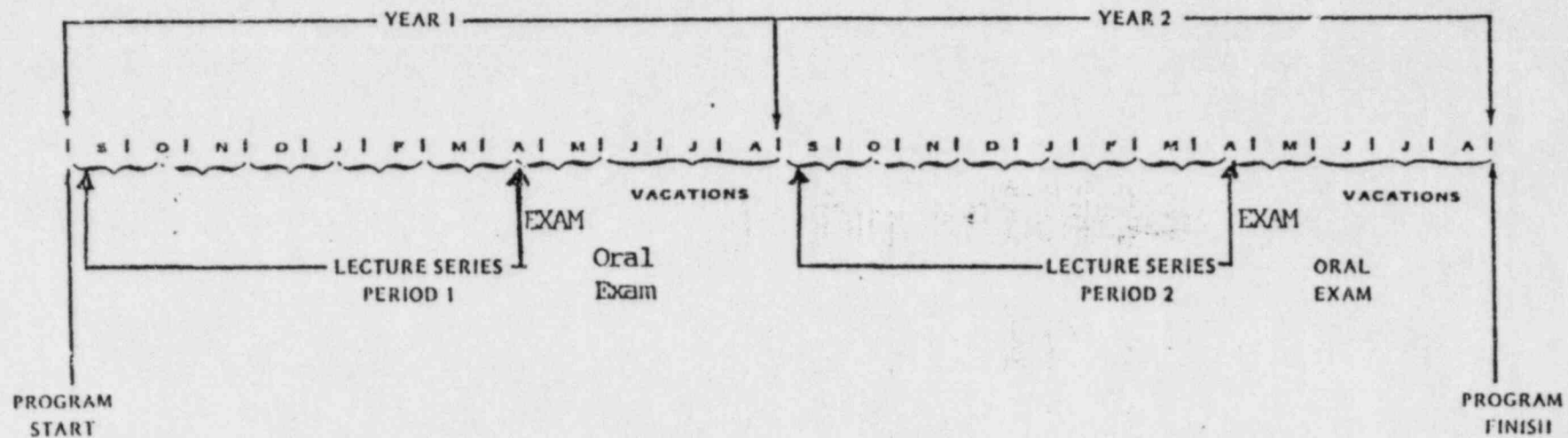


Figure 1. Typical Overall NRC Licensed Operator Requalification Program Schedule

A comprehensive, simulated NRC written examination is required to be administered to all NRC Licensed Operators prior to December 17th of each year. This examination, which will be prepared and graded by the Training Group or a consultant, will normally be scheduled each year prior to September 1. This examination will not only provide an evaluation of the previously conducted lecture period but will also serve as the basis for determining required lecture attendance for the upcoming lecture period. This examination is documented on Form 0-9, PNPS Licensed Operator Requalification Summary. This examination may be administered by the USNRC. This examination may consist of several examinations if administered by the Pilgrim Station Training Department.

The results of each individual's annual examination will be recorded in Section I/IIA of Form 0-9. An individual failing to achieve an overall examination grade of 80% overall/70% per section will be removed from licensed duties and will be required to satisfactorily complete an accelerated training program and will be documented on Form 0-10, PNPS Accelerated Training Record. The sequence of events to be followed after an examination failure is outlined in Section I/IIA - 1 of the "PNPS Licensed Operator Requalification Summary."

Individuals receiving a grade of less than 80% in any particular area of the annual examination shall be required to attend lectures on that subject during the upcoming lecture period. The procedure will be outlined in the next section.

If a case develops where a licensee has not actively been performing the functions of the Licensed Reactor Operator or Senior Reactor Operator for a period of four months or longer, he/she shall be required to pass a requalification examination as specified by the Nuclear Training Specialist and receive NRC Operator Licensing Branch approval prior to resuming licensed duties. The examination will be broad enough to determine the licensee's knowledge of any license changes, facility design modifications and procedure changes that may have occurred during his/her absence.

To ensure the validity of the certifications required by 10 CFR Part 55 and the integrity and honesty of the requalification examination, a separate examination shall be prepared and administered for each requalification class. Each requal exam shall be proctored by the Training Department. Take-home quizzes and/or exams and on-shift written exams shall not be allowed. Open book written examinations shall not be allowed. Trainees found in violation of these requirements shall be subject to disciplinary action by BECo.

3.1.2A.1.2 Lecture Series

All NRC Licensed personnel shall attend formal lectures except as exempted by the results of the annual written examination. Videotape, film presentations, and/or self-study shall not be used for more than 50 percent of the lecture series.

The requalification program lecture series consists of the following categories:

1. Principles of Nuclear Power Plant Operation
2. Fundamentals of theory of thermodynamics, and heat transfer and fluid flow
3. Plant systems design, control and instrumentation, including safety and emergency systems
4. Procedures - normal, abnormal, emergency and radiological control
5. Administrative procedures, conditions and limitations.
6. Plant Status Update
7. Refueling procedures (see page #118 for program requirements)

Following the completion of the annual written examination, the Nuclear Training Specialist will utilize Section A-2 of the "PNPS Licensed Operator Requalification Summary" (Form 0-9) to determine lecture attendance requirements during the upcoming lecture period. A grade less than 80% on the specified section of the written examination will require lecture attendance on a related subject.

Following administration of the annual written examination, there will be time to prepare the necessary lesson, based on the results of this annual exam, prior to the start of the next years requalification training.

All NRC licensed operators shall attend the plant status update lecture scheduled during the lecture series. This lecture covers items such as plant modifications and changes, operating problems, relevant nuclear incidents and abnormal occurrences, procedure changes and other items of continuing interest to the operating staff.

All NRC Licensed Operators shall also attend lectures during each lecture segment covering a review of normal, abnormal and emergency procedures and mitigation of accidents involving a degraded core. This will ensure a continuous capability to respond to unexpected operating conditions.

Training on refueling procedures will cover the March 8, 1980 refuel incident where fuel was moved without secondary containment integrity. BECo. committed to NRC in letters dated August 1, 1980 and November 19, 1980 to train licensed operations personnel to assure continual reinforcement of the concerns raised during that incident. This training will be conducted prior to a scheduled refueling outage for all licensed personnel involved in fuel handling.

Although not required, a quiz may be administered at the end of the presentation of requalification topics. When quizzes are given, the grade should be recorded and a copy of the quiz retained in the individual's training record.

Personnel failing to attend a required lecture are required to review the content of the lecture on an individual self study basis, Form 0-16 will be used to document the self study. The

Nuclear Training Specialist will then document completion of the Lecturer on Form 0-9 and he/she will affix individual self study. Form 0-16 will be placed in the individuals file.

On-The-Job-Training

On-the-job training consists of (1) on-shift performance of reactivity manipulations, (2) abnormal and emergency procedure review, (3) keeping abreast of significant facility and procedure changes, and (4) review of significant industry developments and/or NRC notices or bulletins.

Reactivity Manipulations

Each licensed operator shall, during each two-year requalification training program perform a minimum of 10 reactivity control manipulations which demonstrate his/her skill and/or familiarity with reactivity control systems. Each licensed Senior Operator shall either manipulate the controls or direct the activities of others during 10 reactivity control manipulations. These may consist of any combination of the following, however, reasonable effort will be made to provide a variety of reactivity changes for each operator.

1. Shutdown of cold critical
2. Cold critical to moderator temperature $\geq 350^{\circ}\text{F}$
3. A temperature change from $\leq 400^{\circ}\text{F}$ to $>10\%$ power
4. A heatup temperature change $\geq 150^{\circ}\text{F}$
5. Shutdown to hot critical
6. $>10\%$ power to a temperature 400°F
7. A temperature change from $\geq 350^{\circ}\text{F}$ to cold critical or shutdown
8. A power change $\geq 10\%$ with manual operation of the reactivity control systems.
9. A gradual manual recirculation flow change $\geq 10\%$ balanced by control rod movement to hold reactor power steady.

10. Refueling equipment manipulation with results in one or more fuel elements, control rods or control curtains being installed or removed from the reactor core.
11. A startup of the main turbine generator up to and including placing the control valves on pressure control.

Reactivity control manipulations are documented in the following manner. When an Operator performs or a Senior Operator supervises the performance of a reactivity manipulation, he/she documents it on Form 0-11, "PNPS Reactivity Control Manipulation Record", which is maintained in the Control Room. Periodically, the Nuclear Training Specialist collects these forms, reviews and signs them and finally files these forms in each individual's training record. At the end of each requalification year (each August), the Nuclear Training Specialist computes the total number of reactivity manipulations performed that year and documents this number on Form 0-9, "PNPS Licensed Operator Requalification Summary". If an operator performs only a small number of reactivity manipulations during the first year, the Nuclear Training Specialist will be alerted to the fact that the individual may require special attention during year 2 in order to attain the 10 required reactivity manipulations.

Control Manipulations

The following control manipulations and plant evolutions are

acceptable for meeting the reactivity control manipulations required by Appendix A, paragraph 3.2 of 10CFR part 55.

The items listed in Section A shall be performed on a annual basis. The items listed in Section B shall be performed on a two year cycle:

Section A:

- (1) Plant or reactor startups to include a range that reactivity feedback from nuclear heat addition is noticeable and heatup rate is established
- (2) Manual control of feedwater during startup and shutdown
- (3) Any significant (>10%) power changes in manual rod control or recirculation flow
- (4) Loss of coolant including:
 - (1) Inside and outside primary containment
 - (2) Large and small, including leak rate determination
- (5) Loss of core coolant flow/natural circulation
- (6) Loss of all feedwater (normal and emergency)

Section B:

- (1) Plant shutdown
- (2) Loss of instrument air
- (3) Loss of electrical power (and/or degraded power source)
- (4) Loss of condenser vacuum

- (5) Loss of service water
- (6) Loss of shutdown cooling
- (7) Loss of component cooling system or cooling to an individual component
- (8) Loss of Normal Feedwater or Normal Feedwater system failure
- (9) Loss of Protective System Channel
- (10) Mispositioned control rod or rods (or rod drops)
- (11) Inability to drive control rods
- (12) Conditions requiring the use of the SBIC system
- (13) Fuel cladding failure or high activity in reactor coolant or offgas
- (14) Turbine or Generator trip
- (15) Malfunction of automatic control system(s) which affect reactivity
- (16) Malfunction of reactor coolant pressure control system
- (17) Reactor trip
- (18) Main steam line break (inside or outside containment)
- (19) Nuclear instrumentation failure(s)

Each licensed operator shall perform or participate in a combination of reactivity control manipulations based on the availability of plant equipment and systems. Those control manipulations which are not performed at the plant may be performed on a simulator reproducing the general operating characteristics and arrangement of the Pilgrim Station. The use of Technical Specifications should be maximized during the

Simulator Control Manipulations. Personnel with Senior Reactor Operators Licenses are credited with these activities if they direct or evaluate control manipulations as they are performed.

The Nuclear Training Specialist will document the Control Manipulations on Form 0-15 as they are performed at the station or on a simulator. If a simulator is used, the name of the simulator facility shall be listed.

Abnormal and Emergency Procedure Review

Abnormal and Emergency Procedures will be reviewed by all licensed operators on a regularly scheduled basis. The Nuclear Training Specialist or Day Watch Engineer may specify procedures he/she desires to be reviewed on shift. After a licensee has reviewed the specified procedures, completion will be documented on a form provided. Each training cycle, the Training Department will assure that all abnormal and emergency procedures have been reviewed. When all licensed individuals have completed the review, the Nuclear Training Specialist retrieves the form and documents the procedure review on Form 0-9, PNPS Licensed Operator Requalification Summary.

3.1.2A.1.4 Annual Performance Evaluation

A systematic observation and evaluation of the performance and competency of licensed operators and senior operators by training staff members or simulator training instructors including evaluation of actions taken or to be taken during actual or simulated abnormal and emergency conditions will be done annually during the simulator training. This evaluation will be in a form provided by the simulator contractor.

3.1.2A.1.5

Plant Walkthrough Examination

At the conclusion of the requalification program, the Nuclear Training Specialist or technically qualified person from an operating BWR facility, simulator, or consultant, will administer a plant walkthrough, special emphasis is given to operator response to abnormal and emergency conditions.

The plant walkthrough examination will be conducted utilizing Form 0-7, PNPS Oral Examination Summary Report. Completion of the walkthrough will be documented on the PNPS Licensed Operator Requalification Summary. Passing grade for this examination is a point average value of 3.0. If the candidate receives a point average less than 3.0 he/she will be removed from licensed duties and placed in accelerated training. If as a result of this oral examination it is determined that a need exist for further training in selected areas, the training will be scheduled as soon as practicably possible. If a consultant is used he/she may use their form in place of Form 0-7.

3.1.2A.2

Program Schedule

The requalification program schedule is as described in Section 3.1.2.1 and as illustrated in Figures 1 and 2.

The Senior Nuclear Training Specialist has the authority to modify the normal requalification training schedule as special circumstances arise.

3.1.2A.3

Program Responsibilities

Responsibilities for Operator Requalification Training are summarized below:

3.1.2A.3.1

Nuclear Operations Manager

The Nuclear Operations Manager is responsible for:

1. Annually reviewing the Training Record of each Licensed Operator.

3.1.2A.3.2

Senior Nuclear Training Specialist

The Senior Nuclear Training Specialist is responsible for:

1. Overseeing implementation of the Licensed Operator Regualification Program.
2. Maintaining custody of all operations group requalification training records.
3. Approving changes in the requalification training program schedule.
4. Reviewing the results of the plant walkthrough examination conducted every two years.
5. Periodically reviewing requalification program progress.
6. Reviewing the results of the annual written Simulated NRC Examination.

3.1.2A.3.3

Nuclear Training Specialist

The Nuclear Training Specialist is responsible for:

1. Implementing the Licensed Operator Regualification Program Training.
2. Preparing and grading the annual simulated NRC written examination.
3. Utilizing the results of the annual written exam, determining required lecture attendance for the upcoming lecture period.
4. Preparing any required accelerated training programs.

5. Preparing and evaluating the results of a requalification exams administered to persons failing to perform the functions of a licensed operator for a period of four months or longer.
6. Scheduling all requalification training lectures.
7. Developing a lesson plan for each lecture.
8. Assigning qualified lecturers for requalification lectures.
9. Preparing and grading any quizzes that may be given in conjunction with the requalification training lecture series.
10. Periodically collecting reactivity control manipulation records from the Control Room.
11. Overseeing abnormal and emergency procedure reviews.
12. Coordinating the completion of each operator's Annual Performance Evaluation.
13. Scheduling the plant walkthrough examination at the end of each requalification program.
14. Modifying the normal requalification training schedules as necessary due to special circumstances.
15. Maintaining all licensed operator requalification program documentation.
16. Making applications for operator license renewals based upon successful participation in the requalification training program.

17. Ensuring that all significant facility design changes, license changes and procedure changes are reviewed by licensed personnel.

3.1.2A.3.4 Day Watch Engineer

The Day Watch Engineer is responsible for:

1. Observing equipment and plant operation by licensed personnel and making recommendations to the Nuclear Training Specialist on any additional or specialized training that might be required.

3.1.2A.4 Program Documentation

The Nuclear Training Specialist is responsible for maintaining licensed operator requalification training records. This includes documentation maintained in each licensed individual's training record and general requalification program files.

3.1.2A.4.1 Training Records

The following requalification training program documentation will be maintained in each individual's training record:

Documentation

0-9, Licensed Operator Requalification Summary

0-7, Oral Examination Summary Report

0-11, Reactivity Control Manipulation Record

0-5, Control Manipulations Record

Annual Written Examinations

0-10, Accelerated Training Record

(if required)

Quizzes administered in conjunction with requalification program.

3.1.2A.4.2 General Requalification Program Files

The following requalification training program documentation will be maintained in general files:

Documentation

Annual written examination answer keys

Lecture Attendance Records

All lecture lesson plans

0-12 License Operator Document Acknowledgement Sheet

3.1.2.B Senior Reactor Operator Limited to Fuel Handling (LSRO)

3.1.2.B.1 Purpose

The purpose of this section is to describe the process by which requalification of the Senior Reactor Operator Limited to Fuel Handling (LSRO) is accomplished.

3.1.2.B.1.1 Program Description

The requalification process for the LSRO is keyed to station outages rather than any calendar period. This method is used to insure that all LSRO's will be requalified prior to each outage in which they will handle or supervise handling of fuel.

The Requalification Program for LSRO's complies with the intent of 10CFR55 Appendix A.

The training program shall also discuss the March 8, 1980 refuel incident where fuel was moved without secondary containment integrity. This training will be conducted prior to a scheduled refueling outage for all LSRO's.

Based on successful participation in this program Limited Senior Reactor Operators will thus be qualified.

3.1.2.B.1.2 Documentation

A. Form 0-8, "PNPS LSRO Oral Examination Summary Report

1. This report summarizes the completion of the oral examination.

B. Form 0-14, "PNPS LSRO Requalification Summary

1. This form documents requalification training

3.1.2.B.2 Applicability

This program applies to all previously Licensed LSRO's who will supervise the handling or handle fuel during a scheduled refueling outage.

3.1.2.B.3 Responsibilities

3.1.2.B.3.1 Technical Training Group Leader

The Technical Training Group Leader is responsible for:

- a. Overseeing the implementation of the LSRO Requalification Program.
- b. Approving significant changes in the LSRO Requalification Training Program schedule.
- c. Periodically reviewing requalification program progress.

3.1.2.B.3.2 Operations Training Group Leader

The Operations Training Group Leader is responsible for:

- a. Authorizing LSRO's to perform fuel handling functions during an outage based on successful completion of the LSRO Requalification Program.
- b. Approving training module changes for technical adequacy.

3.1.2.B.3.3 Staff Development Administrator

The Staff Development Administrator is responsible for:

- a. Maintaining custody of all LSRO requalification records.
- b. Provide instructional design review on training modules used by the LSRO Requalification Program.

3.1.2.B.3.4 Nuclear Training Specialist

The Nuclear Training Specialist is responsible for:

- a. Implementing and scheduling the LSRO Requalification Training Program.
- b. Developing approved training modules, preparing and grading tests.
- c. Overseeing the performance of dummy fuel assembly manipulations.
- d. Making applications for LSRO license renewals as needed.

The LSRO Requalification Program consists of three major sections, the first being fuel handling specific training in the following topics.

- I. Reactor and Fuel Characteristics
- II. Equipment and Instrumentation Description and Design
- III. Procedures and Limitations
- IV. Emergency Systems and Safety Devices
- V. Health Physics and Radiation Protection
- VI. Thermodynamics

This knowledge based training can be delivered in the traditional instructor (lecture) student fashion or as a monitored self paced program in which the instructor functions as:

- a. a subject matter expert (being a technical resource for the student).
- b. an instructional facilitator (employing proven instructional techniques to increase motivation and competency).
- c. an exam proctor (to ensure competency has been achieved).

In both cases, each training module will consist of at a minimum; approved a) performance objectives, b) lesson body, and c) criterion tests.

These training modules shall undergo the standard Nuclear Training Department review process.

3.1.2.B.4.1 Dummy Fuel Manipulations

The second section of the LSRO Requalification Program is the actual manipulation of a dummy fuel assembly. A blade guide may be substituted for a fuel assembly.

Each LSRO shall participate in at least two dummy fuel manipulations prior to each Pilgrim outage.

Manipulations shall normally be performed in the fuel pool. Consideration should be given to conducting training on other available fuel handling equipment.

Satisfactory fuel assembly manipulations are documented in Section B of Form O-14.

3.1.2.B.4.2 Written Examination

The third section of the LSRO Requalification Program is the written examination.

All LSRO's are required to successfully complete a simulated NRC Senior Reactor Operator, Limited to Fuel Handling, written examination prior to each outage. This exam, which will be prepared and graded by the Nuclear Training Specialist, will serve as the basis for determining successful completion of the LSRO Requalification Program. The exam will include questions on any applicable procedure, design or technical specification changes occurring during the previous year that apply to fuel handling.

The results of each individual's written exam will be recorded in Section C of Form O-14. An individual failing to achieve an overall examination grade of 80% overall or 70%/section, will be required to satisfactorily complete an accelerated training program and pass a makeup examination prior to requalification. The content of the accelerated training program will be documented on Form O-10, Accelerated Training Record. The sequence of events to be followed after an exam failure are outlined in Section C of the Fuel Handler Requalification Summary, Form O-14.

Satisfactory completion of the LSRO Requalification Program will be documented by the Nuclear Training Specialist in Section D of the LSRO Requalification Summary. Following program completion authorization to participate as a LSRO in the upcoming outage will be documented by the Operations Training Group Leader.

3.1.2.B.5 Program Documentation

The Staff Development Administrator is responsible for maintaining LSRO Requalification Training Records. This includes documentation maintained in each licensed individual's training record and general Fuel Handler Requalification Program Files.

3.1.2.B.5.1 Training Records

The following Requalification Training Program Documentation will be maintained in each individual's training record:

Documentation

0-14, PNPS LSRO Requalification Summary

Written Examinations

0-8, PNPS SRO Limited to Fuel Handling Oral Examination
Summary Report

0-10, PNPS Accelerated Training Record (if required)

Quizzes administered in conjunction with Requalification Program

3.1.2.B.5.2 General Requalification Program Files

The following Requalification Training Program Documentation will be maintained in general files:

Written Examination Answer Key
Class Attendance Records
Lesson Plans (Training Modules)

3.1.3 CERTIFICATION REQUIREMENTS FOR PNPS OPERATIONS PERSONNEL

3.1.3.1 PURPOSE

The purpose of this procedure is to provide a method to furnish management, on a routine basis, information concerning current qualifications of PNPS Operations Personnel. In order to be considered qualified for an operations position, the requirements outlined on the Certification Form(s) applicable to the position in question must be completed. A matrix of the forms applicable to the various PNPS Operations Positions is provided in section 3.1.3.2.

3.1.3.2 CERTIFICATION REQUIREMENTS MATRIX FOR PNPS OPERATIONS PERSONNEL

Certification Form No.	OPERATIONS POSITIONS:						
	NPO (L)	NPO (U)	SRO	NWE	NOS	LSRO	NAO
0-1	X	X	X	X	X	X	X
0-2	X		X	X	X	X	X
0-3A					X		
0-3B				X			
0-4			X	X			
0-5							X
0-6						X	
0-7	X		X	X	X		
0-8						X	
S-1				X	X		

X = Form must be completed for indicated position

3.1.3.3 PROCEDURE

3.1.3.3.1 OPERATIONS TRAINING GROUP LEADER (OTGL)

The Operations Training Group Leader (OTGL) will issue a PNPS Operations Personnel Qualification Report (Form 0-18) to the Chief Operating Engineer and the PNPS Station Manager. This report will be issued once per quarter. When special requests are received for verification of the qualification status of specific operations personnel, the OTGL will ensure qualifications files are checked to determine up-to-date status and will issue a special Qualifications Report, Form 0-18, listing only the status of the individual(s) in question. The OTGL will maintain record copies of all issued Qualifications Reports.

3.1.3.3.2 CHIEF OPERATING ENGINEER (COE)

The Chief Operating Engineer (COE) shall ensure, prior to assigning Operations Personnel to various positions, that these personnel are qualified in accordance with the matrix shown in section 3.1.3.2. The routinely issued Form O-18 may be used to determine current qualifications status of personnel. In addition, the COE should request the OTGL to perform a special file check on any personnel being considered for promotion, higher level certification, or other personnel actions. The COE is required to notify the OTGL, via memo, of any change in job classification of any Operations Group personnel prior to the effective date of the change. This will be done in order to facilitate maintenance of the qualifications records and the Qualifications Report.

PNPS
LICENSED OPERATOR REQUALIFICATION SUMMARY

Name _____

Training Cycle September 19__ to September 19__

License Type RO__ SRO__ License Number _____

Date Issued: _____

I. YEAR #1 PROGRAM

A. Last requalification examination results.

Date of Examination _____

GRADE CHECK IF
 TRAINING REQ.

- | | | |
|--|-------|-------|
| 1. Theory and Principles of
Nuclear Power Plant Operation | _____ | _____ |
| 2. Fundamentals and theory of
Thermodynamics, Heat Transfer
and Fluid Flow | _____ | _____ |
| 3. Plant Systems Design, Control
and Instrumentation, including
safety and emergency systems | _____ | _____ |
| 4. Procedures - Normal, abnormal,
emergency and radiological control | _____ | _____ |
| 5. Administrative procedures
conditions and limitations | _____ | _____ |
| 6. Plant Status Update | _____ | _____ |
| 7. Refuel Training (*) | _____ | _____ |

Overall Average _____

*(Required prior to a scheduled refueling outage only)

NOTE: Passing grade is 80% overall and 70% per section.
 Any section less than 80% requires 2 hours training
 in that subject during requalification year #1.

If the student failed the written examination or failed
 the oral examination, initiate form 0-10 "Accelerated
 Training Record".

B. Required Training Received During Year #1.

<u>Section</u>	<u>Check if Tng. Req.</u>	<u>Date Tng. Received</u>	<u>Hours</u>
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____

C. Program Review for Year #1.

All Required Training completed: (check when completed)

1. Lecture Series completed _____
2. Oral examination completed _____
3. Abnormal and emergency procedure
 review completed _____

 Signature, Sr. Nuclear Training Specialist

 Date

 Signature, Operations Training Supervisor

 Date

Signature, Nuclear Training Manager

Date

Signature, Station Manager

Date

II. YEAR #2 PROGRAM

A. Last Requalification Examination Results

Date of Examination _____

	GRADE	CHECK IF TNG. REQ.
1. Theory and principles of Nuclear power plant operation	_____	_____
2. Fundamentals and theory of thermodynamics, heat transfer and fluid flow	_____	_____
3. Plant systems design, control and instrumentation, including safety and emergency systems	_____	_____
4. Procedures - normal, abnormal, emergency and radiological control	_____	_____
5. Administrative procedures con- ditions and limitations	_____	_____
6. Plant status update	_____	_____
7. Refuel training (*)	_____	_____

Overall average _____

*(Required prior to scheduled refueling outage only)

NOTE: Passing grade is 80% overall and 70% per section.
 Any section less than 80% requires 2 hours training
 in that subject during requalification year #2.

If the student failed the written examination or failed
 the oral examination, initiate form 0-10 "Accelerated
 Training Record."

B. Required Training Received during Year #2.

<u>Section</u>	<u>Check if Tng. Req.</u>	<u>Date Tng. Received</u>	<u>Hours</u>
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____

C. Program Review for Year #2.

All required training completed. (check when completed)

- 1. Lecture Series completed _____
- 2. Oral examination completed _____
- 3. Abnormal and emergency procedure
 review completed _____

 Signature, Operations Training Supervisor

 Date

Signature, Operations Training Supervisor

Date

Signature, Nuclear Training Manager

Date

Signature, Station Manager

Date

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PNPS
Accelerated Training Record

Name _____ Date _____

Title _____

Type of NRC License _____

A. Date of Requalification Examination _____

Exam Grades

Section 1 _____

Section 2 _____

Section 3 _____

Section 4 _____

Section 5 _____

Section 6 _____

| (*) Section 7 _____

Overall Grade

Note: Passing Grade is
80% overall and
70% per section
or ≥ 3.0 on the
oral examination
point average

or Failed Oral Examination _____
Date

Point Average

B. Date Removed from Licensed Duties _____

C. Makeup Assignment:

1. Home study Yes ___ No ___

Nature of Assignment

2. Classroom Study Yes ___ No ___

Nature of Assignment:

| * (Required prior to a scheduled refueling outage)

D. Makeup Examination:

Date of Makeup Examination _____

Exam Grades

Section 1 _____

Section 2 _____

Section 3 _____

Section 4 _____

Section 5 _____

Section 6 _____

| (*)Section 7 _____

Overall Grade

Note: Passing Grade is
80% overall and
70% per section
or \geq 3.0 point average
on the oral examination

or Makeup Oral Examination _____
Date Point Average

E. Date Requalified for Licensed Duties _____

Date Signature, Nuclear Training Specialist

Date Signature, Sr. Nuclear Training Specialist

Date Signature, Nuclear Operations Manager

| *(Required prior to a scheduled refueling outage)

PNPS
Reactivity Control Manipulations Record

Name _____ Sept. 19__ to Sept. 19__

Approved Reactivity Control

1. Shutdown to Cold Critical
2. Cold Critical to a moderator temperature ≥ 350 F
3. A temperature change from 400 F to 10% power
4. A heatup temperature change ≥ 150 F
5. Shutdown to Hot Critical
6. $>10\%$ power to a temperature ≤ 400 F
7. A temperature change from ≥ 350 F to Cold Critical or Shutdown
8. A power change $\geq 10\%$ with manual operation of the Reactivity Control Systems
9. A gradual manual recirculation flow change $\geq 10\%$ balanced by control rod movement to hold reactor power steady
10. Refueling equipment manipulation which results in one or more fuel elements, control rods or control curtains being installed or removed from the reactor core.
11. A startup of the Main Turbine Generator up to and including placing the control valves on pressure control.

<u>REACTIVITY CONTROL MANIPULATION NUMBER</u>	<u>DATE</u>	<u>SUPERVISED THE MANIPULATION</u>	<u>MANIPULATED THE CONTROLS</u>
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____

Return completed Form to the Training Department.

 Date Signature, Nuclear Training Specialist

 Date Signature, Sr. Nuclear Training Specialist

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PNPS
EMPLOYEE DEVELOPMENT REPORT

Employee's Name _____ Date _____

Employee's Job Title _____

Type of NRC License (check one) RO SRO

Supervisor _____

Instructions: For each factor to be rated, indicate the Individual's Performance Level on a scale of 1 to 10. 1 being the lowest level of Performance and 10 being the highest level of Performance. For each factor, provide a comment as to why you have rated this individual at that level. NOTE: For each factor rated equal to or less than 5, the comments section must be completed.

Factors to be Rated:

(1) Knowledge of Work -- Considers all phases of this and related jobs.

1 2 3 4 5 6 7 8 9 10

Comments _____

(2) Quality of Work -- Consider accuracy and thoroughness of work including documentation.

1 2 3 4 5 6 7 8 9 10

Comments _____

(3) Quantity of Work -- Volume of work based upon recognized standards.

1 2 3 4 5 6 7 8 9 10

Comments _____

(4) Dependability -- Consider compliance with procedures and reliability and performance under abnormal circumstances.

1 2 3 4 5 6 7 8 9 10

Comments _____

(5) What added training or experience would make this employee more valuable?

(6) Has there been any indication of aberrant behavior or change in behavior pattern? (consider frequent absenteeism, tardiness, cooperation with others, acceptance be fellow workers, and general overall attitude.)

Yes _____ No _____

If yes, explain _____

(7) Evaluation performed by:

Signature

Job Title

Date

(8) Evaluation reviewed by individual being rated:

Signature

Date

I agree _____ disagree _____ with this development report.
If disagree, explain.

(9) Employee Development Report reviewed by :

Date

Signature, Day Watch Engineer

Date

Signature, Nuclear Training Specialist

Date

Signature, Sr. Nuclear Training Specialist

Return completed form to the Training Department.

SENIOR REACTOR OPERATOR
LIMITED TO FUEL HANDLING
(LSRO)

Name _____

License Number _____

Date Issued _____

Date of next planned outage _____
month - year

I. Subjects to be covered:

- A. Reactor and fuel characteristics
- B. Equipment and instrumentation description and design
- C. Procedures and limitations, including refuel procedures
- D. Emergency systems and safety devices
- E. Health physics and radiation protection

II. Training Received

<u>Subject</u>	<u>Date(s) training received</u>	<u>hours</u>
A	_____	_____
B	_____	_____
C	_____	_____
D	_____	_____
E	_____	_____

Total Hrs. Received _____

III. Evaluation

A. Exam results

<u>Subject</u>	<u>Grade</u>
A	_____
B	_____

<u>Subject</u>	<u>Grade</u>
C	_____
D	_____
E	_____

Overall Average _____

Note: Passing grade is 70% per subject and 80% overall average.

B. Dummy fuel assembly manipulation record

<u>Date manipulation performed</u>	<u>Supervisor signature</u>
1 _____	_____
2 _____	_____
3 _____	_____

C. Oral exam completed (Form 0-8 completed and attached)

Note: Passing grade is a point average value 3.0

_____ Date _____ Signature of Examiner _____

Overall Grade less than 80% or 70%/section or failure of oral examination _____

(a) Accelerated Training Program assigned (Form 0-10)

_____ Date _____ Signature, Sr. Nuclear Tng. Specialist _____

(b) Accelerated Training Program approved

_____ Date _____ Signature, Operations Training Supervisor _____

_____ Date _____ Signature, Station Manager _____

(c) Accelerated Training Program completed

Date

Signature, Sr. Nuclear Tng. Specialist

(d) Makeup exam passed

Date

Makeup
Grade

Signature, Sr. Nuclear Tng. Specialist

IV. Program Summary

Fuel Handler requalification certificate complete

Date

Signature, Sr. Nuclear Tng. Specialist

Date

Signature, Operations Tng. Supervisor

Date

Signature, Station Manager

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PNPS
CONTROL MANIPULATIONS

Name _____ Training Cycle Sept. 19____ to
Sept. 19____

License Type _____ License Number _____

The following Control Manipulations and Plant Evolutions are acceptable for meeting the Reactivity Control Manipulations required by Appendix A, paragraph 3.a. of 10CFR part 55. The items in Section A shall be performed on an annual basis. The items in Section B shall be performed on a two year cycle. Those Control Manipulations which are not performed at the plant may be performed on a simulator, if so the simulator used shall be listed.

Section A - The following items shall be performed on an annual basis:

1. Plant or Reactor startups to include a range that Reactivity feedback from Nuclear Heat Addition is noticeable and heatup rate is established:

Year 1--Date _____ Plant _____ Simulator _____

Year 2--Date _____ Plant _____ Simulator _____

2. Manual control of Feedwater during startup and shutdown:

STARTUP

Year 1--Date _____ Plant _____ Simulator _____

Year 2--Date _____ Plant _____ Simulator _____

SHUTDOWN

Year 1--Date _____ Plant _____ Simulator _____

Year 2--Date _____ Plant _____ Simulator _____

3. Any significant (>10%) power changes in Manual Rod Control or Recirculation Flow:

Year 1--Date _____ Plant _____ Simulator _____

Year 2--Date _____ Plant _____ Simulator _____

4. Loss of Coolant including:

- 1. Inside and outside primary containment
 Inside primary containment:

Year 1--Date _____ Plant _____ Simulator _____

Year 2--Date _____ Plant _____ Simulator _____

Outside primary containment:

Year 1--Date _____ Plant _____ Simulator _____

Year 2--Date _____ Plant _____ Simulator _____

- 2. Large and small, including Leak Rate Determination:
 Large leak:

Year 1--Date _____ Plant _____ Simulator _____

Year 2--Date _____ Plant _____ Simulator _____

Small leak:

Year 1--Date _____ Plant _____ Simulator _____

Year 2--Date _____ Plant _____ Simulator _____

5. Loss of Core Coolant Flow/Natural Circulation:

Year 1--Date _____ Plant _____ Simulator _____

Year 2--Date _____ Plant _____ Simulator _____

- 6. Loss of all feedwater (normal and emergency):
 Normal:

Year 1--Date _____ Plant _____ Simulator _____

Year 2--Date _____ Plant _____ Simulator _____

Emergency:

Year 1--Date _____ Plant _____ Simulator _____

Year 2--Date _____ Plant _____ Simulator _____

Section B - The following items shall be performed on a two year cycle:

1. Plant Shutdown:

Date _____ Plant _____ Simulator _____

2. Loss of Instrument Air:

Date _____ Plant _____ Simulator _____

3. Loss of Electrical Power (and/or degraded power sources):

Date _____ Plant _____ Simulator _____

4. Loss of Condenser Vacuum:

Date _____ Plant _____ Simulator _____

5. Loss of Service Water:

Date _____ Plant _____ Simulator _____

6. Loss of Shutdown Cooling:

Date _____ Plant _____ Simulator _____

7. Loss of Component Cooling System or Cooling to an Individual Component:

Date _____ Plant _____ Simulator _____

8. Loss of Normal Feedwater or Normal Feedwater System Failure:

Date _____ Plant _____ Simulator _____

9. Loss of Protective System Channel:

Date _____ Plant _____ Simulator _____

10. Mispositioned Control Rod or Rods (or Rod Drops):

Date _____ Plant _____ Simulator _____

11. Inability to Drive Control Rods:

Date _____ Plant _____ Simulator _____

12. Conditions Requiring use of SBLC System:

Date _____ Plant _____ Simulator _____

13. Fuel Cladding Failure or High Activity in Reactor Coolant or Off Gas:

Date _____ Plant _____ Simulator _____

14. Turbine or Generator Trip:

Date _____ Plant _____ Simulator _____

15. Malfunction of Automatic Control System(s) which affect Reactivity:

Date _____ Plant _____ Simulator _____

16. Malfunction of Reactor Coolant Pressure Control System:

Date _____ Plant _____ Simulator _____

17. Reactor Trip:

Date _____ Plant _____ Simulator _____

18. Main Steam Line Break (inside or outside containment):

Date _____ Plant _____ Simulator _____

19. Nuclear Instrumentation Failure (ε):

Date _____ Plant _____ Simulator _____

Completion of Section A verified for Year 1

Nuclear Training Specialist Date

Completion of Section A verified for Year 2

Nuclear Training Specialist Date

Completion of Section B verified

Nuclear Training Specialist Date

Form 0-15 completed

Senior Nuclear Training Specialist Date

To: _____ From: Training Department Date: _____

PILGRIM NUCLEAR POWER STATION
TRAINING GROUP
SELF STUDY VERIFICATION FORM

Requalification Program

To facilitate a means for you to make up the material missed on the Requalification Program of your scheduled training, a copy/copies of the Learning Package is/are attached for training on the following: _____

We request you review the material referenced in the Learning Package(s) within the next 14 days. Upon completion of your review, please complete below and return.

If you have any questions regarding this material and/or desire more information, please contact _____.

To: Nuclear Training Specialist

From: _____ Date: _____

Review of subject material has been completed.

Signature: _____

Reviewed and filed _____
Nuclear Training Specialist

REQUALIFICATION FOR
NUCLEAR AUXILIARY OPERATOR

Name _____ BECo. Employee # _____

Year _____

A. The above-named received training in the following subject areas:

1. D.O.T. Regulations for shipping of radioactive materials _____
DATE COMPLETED

2. N.R.C. Regulations for shipping of radioactive materials. _____
DATE COMPLETED

3. Radwaste Systems for Handling and Disposal of Radioactive materials _____
DATE COMPLETED

B. Training Completed

1. _____
Radwaste Supervisor Date

2. _____
Sr. Nuclear Training Specialist Date

PNPS OPERATIONS PERSONNEL
QUALIFICATIONS REPORT
(*NAO, NPO(U), NPO(L), SRO, NOS, NWE, LSRO)

Quarterly

Special

Page ___ of ___

Date of Issue: _____ Validated by OTGL: _____

NAME	Present Job *	Completed Certification Forms---										
		x = completed form in file										
		01	02	03A	03B	04	05	06	07	08	S1	

3.2 Maintenance Group Training

Objective

The objective of Maintenance Group Training is to provide for the indoctrination and training of Maintenance Personnel as necessary to assure that suitable maintenance proficiency is achieved and maintained.

Applicability

Personnel qualification will be determined by the training manual requirements in effect as of the date of hire.

Program Requirements

Training Requirements Satisfied

Requirement Summary

- | | | |
|----|---|---|
| 1. | a) Regulatory Guide 1.8
(ANSI N18.1, Section 5.3.4 | Requirements for Maintenance
Training |
| | b) Regulatory Guide 1.70.38,
Section 13.2.2.2 | |
| 2. | a) 10CFR50, Appendix B,
Criteria II (ANSI N18.7,
Section 3.3) | Job Related Quality
Assurance Training |
| 3. | a) 10CFR50, Appendix B,
Criteria II
(ANSI N18.7, Section 5.2.10)
(ANSI N45.2.3, Section 2.4) | Housekeeping and Cleanliness
Control Training |
| 4. | a) 10CFR50, Appendix B.
Criteria II | Indoctrination in proper
use applicable procedures |
| | b) 10CFR50, Appendix B,
Criteria V | |

- | | | |
|----|--|---|
| 5. | a) 10CFR50, Appendix B,
Criteria III | Indoctrination in
procedures utilized to |
| | b) 10CFR50, Appendix B,
Criteria VI
(ANSI N18.7, Section 5.2.15) | keep current on applicable
design changes/modifica-
tions |

Welders Only

Training Requirements

Requirement Summary

- | | | |
|----|--|---|
| 1. | a) ASME Boiler and Pressure
Vessel Code, Section IX | Welding Performance
Qualifications |
| | b) ANSI B-31-1-1973
Section 127.5.1 | |
| 2. | a) Regulatory Guide 1.71 | Welder Qualification for
Areas of Limited Accessi-
bility |
| 3. | a) 10CFR50, Appendix B,
(ANSI N18.7, Section 5.2.18) | Control of Special
Processes |
| 4. | a) 10CFR50, Appendix B,
Criteria IX (ANSI N18.7,
Section 5.1.12) | Welding Records |

3.2.1 Initial Maintenance Group Training

3.2.1.1 Program Description

Maintenance Group Training is conducted under the cognizance of the Technical Training Group Leader utilizing the Maintenance Group Training Forms.

- Form M-1 Maintenance Group General Indoctrination
- Form M-2 Qualification Requirements for Nuclear Mechanics (Mechanical)
- Form M-3 Qualification Requirements for Welders
- Form M-4 Qualification Requirements for Nuclear Control Technicians
- Form M-5 Qualification Requirements for Nuclear Mechanics (Electrical)

The Technical Training Group Leader will normally delegate Maintenance Training responsibilities to a Nuclear Training Specialist for knowledge training requirements and the Chief Maintenance Engineer/designee for the required performance based on-the-job training (OJT).

All individuals reporting in to the Maintenance Group first complete Form M-1, Maintenance Group General Indoctrination. This indoctrination will be conducted by the Technical Training Group Leader/designee. Following completion of Form M-1 individuals will then complete those additional training form qualification requirements related to their job. These individual

qualification card tasks are satisfied by demonstrating competency in that task. Formal classroom training, pretesting, self study, equipment simulation and demonstrating proficiency on the job are mechanisms for qualification card sign off.

Any qualification card related training, classroom or OJT, will be documented by the use of classroom attendance forms (classroom training) or performance based OJT forms.

Vendor training will be conducted as necessary to develop the proficiency of Maintenance personnel in selected areas. Vendor training will meet established Nuclear Training Department criteria and will be documented on the individuals PNPS Employee Experience Record.

3.2.1.1.1 Nuclear Mechanics

All Nuclear Mechanics are required to complete qualification Forms M-1 and M-2.

3.2.1.1.2 Nuclear Mechanics (Electrical)

All Nuclear Mechanics (Electrical) are required to complete qualification Forms M-1, M-2, and M-5.

Qualification requirements for Nuclear Mechanics are accomplished by demonstrating proficiency on all the tasks identified on the qualification card. The individual demonstrates proficiency by pre-testing, attending formal classroom training, individual self study and completing performance based OJT to the criteria of

of each qualification card task. Satisfactory performance is documented by the Technical Training Group Leader/Chief Maintenance Engineer.

3.2.1.1.3 Welders

Those Nuclear Mechanics designated Welders are required to demonstrate proficiency on all the tasks identified in training qualification Forms M-1, M-2, and M-3. The individuals demonstrates proficiency by successfully meeting the criteria stated in each qualification card task. This is done by pre-testing, attending formal classroom training, and completing performance based OJT. Detailed welder qualification requirements are specified in Pilgrim Procedure 3.M.4-15, General Welding Procedure. A welder must qualify and periodically requalify in each welding procedure he/she performs. The date of initial qualification on each welding procedure should be documented on Form M-3.

Contract welders doing work at PNPS may be qualified by the Contractor using the same or equivalent procedures wherein the essential variables are within the limits established in Section IX, ASME Boiler and pressure vessel code. Qualification requirements of Contract Welders are specified in Section 127.5 of ANSI B31.1-1973. Contract welder qualifications will be documented on PNPS Qualification Form M-2.

3.2.1.2 Program Schedule

Initial Maintenance Group Training is conducted on a schedule specified by the Technical Training Group Leader and approved by the Chief Maintenance Engineer. Group Training will be conducted utilizing formal classroom training, individual self study, and performance based OJT. Initial Maintenance Group Training shall be completed within a time period specified by the Technical Training Group Leader and approved by the Chief Maintenance Engineer after the individual's assignment to a maintenance group position.

3.2.1.3 Program Responsibilities

Responsibilities for Initial Maintenance Group Training are summarized below:

3.2.1.3.1 Technical Training Group Leader

The Technical Training Group Leader is responsible for:

1. Scheduling and overseeing the implementation of the initial Maintenance Group Training Program.
2. Maintaining custody of all Maintenance Group Training Records.
3. Deleting specific Group Qualification Requirements when an individual's experience or other special factors indicates that the requirements are met or exceeded.
4. Certifying the qualifications of all individuals in the Maintenance Group.

3.2.1.3.2 Chief Maintenance Engineer/Supervisor

The Chief Maintenance Engineer/Supervisor is responsible for:

1. Assess training needs in coordination with the Nuclear Training Department.
2. Make time available for staff to participate in training.
3. Approve the technical adequacy of all training material delivered to their group.
4. Conduct performance based on-the-job training within the unit as appropriate.
5. Evaluate the results of training and reinforce its application on the job.
6. Ensuring that all contract welders are qualified in accordance with ANSI B21.1-1973, Section 127.5.

3.2.1.4 Program Documentation

The Technical Training Group Leader is responsible for maintaining the training records of each individual assigned to the Maintenance Group. Each training record should contain the following documentation as appropriate.

Documentation

General Employee Training

G.E.T.-1 PNPS General Employee Training Checklist
(with written quiz - if administered)

G.E.T.-2 PNPS General Employee Retraining Record

(with written quiz)

Initial Group Training

- G-3 PNPS Employee Experience Record
- M-1 Maintenance Group Training General Indoctrination
- M-2 Nuclear Mechanics
- M-3 Nuclear Welders
- M-4 Nuclear Control Technicians
- M-5 Nuclear Mechanics (Electrical)

In addition to the information contained in each individuals training record, records to support welder qualifications shall be maintained in a file by the Technical Training Group Leader. Those records are specified in Procedure 3.M.4-15, General Welding Procedure.

3.2.2. Additional Maintenance Group Training

3.2.2.1 Program Description

Additional Maintenance Group Training is conducted as considered necessary by the Technical Training Group Leader and the Chief Maintenance Engineer. Some conditions where training could be called for are:

- °improve individual job performance
- °changing industry standards (i.e. INPO, NRC)
- °introduction of new equipment or procedures
- °individual career advancement

Training sessions can be scheduled for the entire department, a specific group within the department, or only selected individuals. All training shall be documented on PNPS Training Form G-2 and sent to the Nuclear Training Department.

Those Nuclear Mechanics qualified as welders are required to requalify if they have not welded under a specific process for a period of three months. Welding records will be maintained in accordance with procedure 3.M.4-15 by the Chief Maintenance Engineer and copies sent to the Nuclear Training Department.

3.2.2.2 Program Responsibilities

3.2.2.2.1 Technical Training Group Leader

The Technical Training Group Leader/designee is responsible for:

1. Assess the training needs in coordination with the Chief Maintenance Engineer/designee of the Maintenance Group.
2. Develop training programs which meet the needs of the Maintenance Group.
3. Implement the required training programs.
4. Evaluate the training given in order to see if program objectives were met.
5. Document and maintain training records.

3.2.2.2.2 Chief Maintenance Engineer

The Chief Maintenance Engineer/designee is responsible for:

1. Assess training needs in coordination with the Technical Training Group Leader/designee.
2. Approve the Technical adequacy of all training programs developed for the Maintenance Group.
3. Evaluate the results of training and reinforce its application on the job.
4. Make time available for maintenance staff to participate in training.
5. Conduct performance based OJT as appropriate.
6. Maintaining welder re-qualification records as specified in Procedure 3.M.4-15 and requalify welders as necessary.

3.2.2.3 Program Documentation

The Technical Training Group Leader/designee and or the Chief Maintenance Engineer/designee is responsible for documenting Maintenance Retraining on Form G-2 and sending the form to the Nuclear Training Department.

PNPS
Maintenance Group Training
General Indoctrination

Name _____

General Indoctrination

Complete an indoctrination on the procedures and instructions which are applicable to the Maintenance Group that implement the Quality Assurance Program. This indoctrination will include the following:

- | | | |
|-----|------------|---|
| 1. | 1.1.1 | Station Organization and Responsibility |
| 2. | 1.2.1 | Operations Review Committee |
| 3. | 1.3.2 | Special Orders |
| 4. | 1.3.4 | Procedures |
| 5. | 1.3.6 | Adherence to Technical Specifications |
| 6. | 1.3.7 | Records |
| 7. | 1.3.8 | Document Control |
| 8. | 1.3.9* | Reports |
| 9. | 1.3.13 | Plant Design Changes |
| 10. | 1.3.14 | Indoctrination and Training |
| 11. | 1.3.16 | Conduct of Personnel in Control Room |
| 12. | 1.3.23* | Preparation of Safety Evaluations |
| 13. | 1.3.24 | Failure and Malfunction Reports |
| 14. | 1.3.26* | Response to Deficiency Reports |
| 15. | 1.4.5 | PNPS Tagging Procedure |
| 16. | 1.4.6 | Housekeeping |
| 17. | 1.5.3 | Maintenance Requests |
| 18. | 1.5.7 | Unplanned Maintenance |
| 19. | 3.M.1-1* | Preventive Maintenance |
| 20. | 3.M.1-1.1 | Instrument and Control |
| 21. | 1.5.9 | Temporary Modifications |
| 22. | 3.M.1-5 | Procurement of Items and Services |
| 23. | 3.M.1-7.1 | Handling and Storage of Material |
| 24. | 3.M.1-8* | Disposition of Non-Conforming Material |
| 25. | 3.M.1-9 | Identification and Control of Material |
| 26. | 3.M.1-10 | Calibration and Control of Maintenance
Tools and Equipment |
| 27. | 3.M.2-1 | Instrument Record System |
| 28. | 3.M.2-8.2 | Pressure Working Standards Calibration |
| 29. | 3.M.4-15 | Welding |
| 30. | 3.M.4-15-1 | Welding Filter Material Control |
| 31. | 8.1 | Periodic Surveillance Test |

Date Completed

Signature, Chief Maintenance Engineer

Requirements Satisfied: a) 10CFR, Appendix B
b) ANSI N18.7
c) BEQAM, Volume II

Return completed form to Training Dept.

Date Completed

Signature, Technical Training Group Ldr.

*Management Only

FORM M-2

PNPS QUALIFICATION REQUIREMENTS FOR
NUCLEAR MECHANICS (MECHANICAL)

NAME _____ SOCIAL SECURITY NUMBER _____

1. Meet all qualifications specified in the Nuclear Mechanic Job Specification.

_____ Date

_____ Signature, Maintenance Engineer

2. Complete Form M-1, Maintenance Group Training General Indoctrination.

_____ Date

_____ Signature, Maintenance Engineer

3. Prepare sketches, document changes or other details to keep company records up to date.

_____ Date

_____ Signature, Maintenance Engineer

4. Perform duties associated with warehouse and tool room operation; that is, receiving, shipping, locating, storing and indexing equipment and records.

_____ Date

_____ Signature, Maintenance Engineer

5. Demonstrate the ability to operate cranes, fork lifts, trucks, and any other plant equipment used for transportation.

_____ Date

Signature, Maintenance Engineer

6. Demonstrate the ability to properly and safely tag out equipment.

_____ Date

Signature, Maintenance Engineer

7. Demonstrate the ability to apply those principles learned in the General Employee Radiological Health & Safety Training on-the-job. Specifically, demonstrate the ability to:

- a. Control the spread of contamination
- b. Minimize one's own radiation exposure
- c. Properly use personnel monitoring equipment
- d. Decontaminate both personnel and equipment

_____ Date

Signature, Maintenance Engineer

8. Shipping of Radioactive Materials

Demonstrate the ability to perform duties related to minimizing, shipping handling and disposal of radioactive material in accordance with the PNPS procedure for handling of radioactive material and within the DOT and NRC requirements.

_____ Date

Signature, Nuclear Training Specialist

FORM M-2

9. Successfully complete the following training modules.

<u>Module #</u>	<u>Module Name</u>	<u>Rev.</u>	<u>Date</u>	<u>Signature, Nuclear Training Specialist</u>
MM-1	-Mathematics for Repairman			
MM-2	-General Physics			
MM-3	-Heat Transfer			
MM-4	-Corrosion Chemistry			
MM-5	-Properties of Materials			
MM-6	-Mechanical and Electrical Print Reading			
MM-7	-Tools			
MM-8	-Rigging, Scaffolding and Cranes			
MM-9	-Mechanical Equipment and Components			
	9.1 pumps and fans			
	9.2 valves and piping			
	9.3 heat exchangers			
	9.4 filters, traps, strainers			
	9.5 turbines			
	9.6 compressors			
	9.7 heating, ventilation, air conditioning equipment			
	9.8 snubbers, hangers, restraints			
	9.9 cranes			
MM-10	-Communication Skills Development			
MM-11	-Reactor Familiarization			

FORM M-2

10. Successfully complete the following PNPS Systems Training Modules.

<u>Module #</u>	<u>Module Name</u>	<u>Rev.</u>	<u>Date</u>	<u>Signature, Nuclear Training Specialist</u>
MM-14	Reactor Recirculation	_____	_____	_____
MM-15	Reactor Cleanup	_____	_____	_____
MM-16	Main Steam	_____	_____	_____
MM-17	Condensate	_____	_____	_____
MM-18	Condensate Demineralizers	_____	_____	_____
MM-19	Feedwater	_____	_____	_____
MM-20	Condenser Cooling Water	_____	_____	_____
MM-21	Service Water	_____	_____	_____
MM-22	Demineralized Water	_____	_____	_____
MM-23	Reactor Building Closed Loop Cooling	_____	_____	_____
MM-24	Turbine Building Closed Loop Cooling	_____	_____	_____
MM-25	Radwaste Systems	_____	_____	_____
MM-26	Spent Fuel Pool Cooling	_____	_____	_____
MM-27	High Pressure Core Injection	_____	_____	_____
MM-28	Reactor Core Injection Cooling	_____	_____	_____
MM-29	Reactor Heat Removal	_____	_____	_____
MM-30	Containment Spray	_____	_____	_____
MM-31	Air Ejector And Offgas	_____	_____	_____
MM-32	Reactor Building Ventilation	_____	_____	_____
MM-33	Turbine Building Ventilation	_____	_____	_____
MM-34	Service Air Systems	_____	_____	_____

FORM M-2

10. Continued

<u>Module #</u>	<u>Module Name</u>	<u>Rev.</u>	<u>Date</u>	<u>Signature, Nuclear Training Specialist</u>
MM-35	TIP System	_____	_____	_____
MM-36	Process Monitoring System	_____	_____	_____
MM-37	Area Radiation Monitoring System	_____	_____	_____
MM-38	Reactor Vessel Internals	_____	_____	_____
MM-39	Turbine Generator	_____	_____	_____
MM-40	PNPS Switchyard	_____	_____	_____
MM-41	AC Distribution	_____	_____	_____
MM-42	DC Distribution	_____	_____	_____
MM-43	CRD System	_____	_____	_____
MM-44	Primary and Secondary Containment	_____	_____	_____
MM-45	SBGT System	_____	_____	_____
MM-46	Diesel Generators	_____	_____	_____

11. Qualification as a Nuclear Mechanic Certified Complete

_____	_____
Date	Signature, Maintenance Engineer
_____	_____
Date	Signature, Chief Maintenance Engineer
_____	_____
Date	Signature, Technical Training Group Leader

Return Completed Form to the Nuclear Training Department

FORM M-3

PNPS QUALIFICATION REQUIREMENTS FOR
WELDERS

NAME _____ SOCIAL SECURITY NUMBER _____

1. Complete Form M-1, Maintenance Group Training General Indoctrination and Form M-2, Qualification Requirements for Nuclear Mechanics.

_____ Date _____ Signature, Technical Training Group Leader

2. Successfully complete the following Training Modules.

<u>Module #</u>	<u>Module Name</u>	<u>Rev.</u>	<u>Date</u>	<u>Signature, Nuclear Training Specialist</u>
	ASME Boiler and Pressure Vessel Codes			
MM-101	Section I	_____	_____	_____
MM-102	Section III	_____	_____	_____
MM-103	Section VIII	_____	_____	_____
MM-104	Section IX	_____	_____	_____

3. Successfully complete the following Training Modules.

<u>Module #</u>	<u>Module Name</u>	<u>Rev.</u>	<u>Date</u>	<u>Signature, Nuclear Training Specialist</u>
MM-105	Cutting and Welding Permits	_____	_____	_____
MM-106	Welding Procedures	_____	_____	_____

4. Qualify, utilizing procedures on at least one of the welding procedures listed in Procedure 3.M.4-15.

_____ Date _____ Signature, Maintenance Engineer

- Requirements Satisfied: a) ASME BPVC, Section IX
 b) 10CFR50, Appendix B,
 Criteria IX (ANSI N18.7,
 Section 5.2.18)

5. Qualification as a Nuclear Welder Certified Complete.

Date	Signature, Maintenance Engineer
Date	Signature, Chief Maintenance Engineer
Date	Signature, Technical Training Group Leader

6. Successfully complete the initial qualification for the following Training Modules on Welding Procedures.

<u>Module #</u>	<u>Module Name</u>	<u>Rev.</u>	<u>Date</u>	<u>Signature, Nuclear Training Specialist</u>
MM-107	P1-T	_____	_____	_____
MM-108	P1-A-LL	_____	_____	_____
MM-109	P1-A-C-Lh	_____	_____	_____
MM-110	P1-AT-Lh	_____	_____	_____
MM-111	P8-T-ag	_____	_____	_____
MM-112	P8-P1-T-Ag	_____	_____	_____
MM-113	P8-P1-AT-Ag	_____	_____	_____
MM-114	P-107, H-101	_____	_____	_____

Form M-3

Date

Signature, Maintenance Engineer

Date

Signature, Chief Maintenance Engineer

Date

Signature, Technical Training Group Leader

Return Completed Form to the Nuclear Training Department

FORM M-4

PNPS QUALIFICATION REQUIREMENTS FOR
NUCLEAR CONTROL TECHNICIANS

NAME _____ SOCIAL SECURITY NUMBER _____

1. Complete Form M-1, Maintenance Group General Indoctrination.

_____ Date _____ Signature, Nuclear Training Specialist

2. Meet all qualifications specified in the Nuclear Control Technician job specification.

_____ Date _____ Signature, Maintenance Engineer

3. Successfully complete the following PNPS System Training Modules.

<u>Module #</u>	<u>Module Name</u>	<u>Rev.</u>	<u>Date</u>	<u>Signature, Nuclear Training Specialist</u>
MM-14	Reactor Recirculation	_____	_____	_____
MM-15	Reactor Cleanup	_____	_____	_____
MM-16	Main Steam	_____	_____	_____
MM-17	Condensate	_____	_____	_____
MM-18	Condensate Demineralizers	_____	_____	_____
MM-19	Feedwater	_____	_____	_____
MM-20	Condenser Cooling Water	_____	_____	_____
MM-21	Service Water	_____	_____	_____
MM-22	Demineralized Water	_____	_____	_____

FORM M-4

3. Continued

<u>Module #</u>	<u>Module Name</u>	<u>Rev.</u>	<u>Date</u>	<u>Signature, Nuclear Training Specialist</u>
MM-23	Reactor Building Closed Loop Cooling			
MM-24	Turbine Building Closed Loop Cooling			
MM-25	Radwaste			
MM-26	Spent Fuel Pool Cooling			
MM-27	High Pressure Core Injection			
MM-28	Reactor Core Injection Cooling			
MM-29	Reactor Heat Removal			
MM-30	Containment Spray			
MM-31	Air Ejector and Offgas			
MM-32	Reactor Building Ventilation			
MM-33	Turbine Building Ventilation			
MM-34	Service Air Systems			
MM-35	TIP System			
MM-36	Process Monitoring System			
MM-37	Area Radiation Monitoring System			
MM-66	Neutron Monitoring System			
	A. SRM System			
	B. IRM System			
	C. APRM System			
	D. RBM System			
MM-67	R.P.I.S. System			

FORM M-4

4. Surveillance Procedures

Complete all Monthly Surveillance Procedures for 2 months and discuss possible effects of performing these procedures as they are done with a qualified Technician.

_____ Date

_____ Signature, I&C Supervisor

5. Successfully complete the following Training Modules.

<u>Module #</u>	<u>Module Name</u>	<u>Rev.</u>	<u>Date</u>	<u>Signature, Nuclear Training Specialist</u>
MM-70	Basic Mathematics	_____	_____	_____
MM-71	Algebra	_____	_____	_____
MM-72	Applied Geometry	_____	_____	_____
MM-73	Applied Trigonometry	_____	_____	_____
MM-74	Mechanics	_____	_____	_____
MM-3	Heat Transfer	_____	_____	_____
MM-4	Chemistry	_____	_____	_____
MM-75	Reactor Technology	_____	_____	_____
MM-48	Basic Electricity	_____	_____	_____
MM-51	Basic Electronics	_____	_____	_____
MM-76	Digital Electronics	_____	_____	_____
MM-77	Electrical and Electronic Troubleshooting	_____	_____	_____
MM-78	Electrical and Electronic Maintenance and Repair	_____	_____	_____
MM-79	Electrical Maintenance and Test Equipment	_____	_____	_____

FORM M-4

5. Continued

<u>Module #</u>	<u>Module Name</u>	<u>Rev.</u>	<u>Date</u>	<u>Signature, Nuclear Training Specialist</u>
MM-6	Electrical and Mechanical Print Reading			
MM-80	Basic Analog Process Control			
MM-81	Hand Tools and Equipment			
MM-82	Principles of Radiation Detection			
MM-83	Group Interaction			
MM-84	Oral Communications			
MM-85	Written Communications			
MM-86	Process Instrument and Control Devices and Equipment			
MM-87	Administrative, Maintenance and Calibration Procedures			
MM-88	Fundamental Calculus			
MM-89	Nuclear Physics			
MM-90	Electrical Control and Protection Logic			
MM-91	Fundamental Computer Theory			

6. Perform all I&C monthly surveillances as indicated on the I&C Monthly Surveillance Testing Schedule at least once with particular emphasis on:

- Technical Specification requirements of the surveillance
- Purpose of the surveillance

Signature, I&C Supervisor

7. Demonstrate the ability to properly and safely isolate, drain, and tag out equipment at PNPS.

_____ Date

_____ Signature, I&C Supervisor

8. Demonstrate the ability to apply those principles learned in General Employee Training "Radiological Health and Safety Indoctrination" on the job.

Specifically demonstrate the ability to:

- | | Date | Signature, I&C Supervisor |
|---|-------|---------------------------|
| a. Control and spread of contamination | _____ | _____ |
| b. Minimize one's own radiation exposure (dose) | _____ | _____ |
| c. Properly use personnel monitoring equipment | _____ | _____ |
| d. Decontaminate both personnel and equipment | _____ | _____ |

9. Demonstrate the ability to calibrate the following to accepted specification.

- | | Date | Signature, I&C Supervisor |
|-----------------------|-------|---------------------------|
| a. Test Gauges | _____ | _____ |
| b. Temperature Guages | _____ | _____ |
| c. Flow Detectors | _____ | _____ |
| d. Level Instruments | _____ | _____ |

10. Qualification as a Nuclear Control Technician Complete

Date

Signature, I&C Supervisor

Date

Signature, Chief Maintenance Engineer

Date

Signature, Technical Training Group Leader

Return Completed Form to the Nuclear Training Department

FORM M-5

PNPS QUALIFICATION REQUIREMENTS
FOR NUCLEAR MECHANICS (ELECTRICAL)

NAME _____ SOCIAL SECURITY NUMBER _____

- 1. Meet all qualifications specified in the Nuclear Mechanic Job Specification.

_____ Date _____ Signature, Maintenance Engineer

- 2. Complete Form M-1, the Maintenance Group Training General Indoctrination and M-2, PNPS Qualification Requirements for Nuclear Mechanics (Mechanical).

_____ Date _____ Signature, Maintenance Engineer

- 3. Prepare sketches, document changes or other details to keep company records up to date.

_____ Date _____ Signature, Maintenance Engineer

- 4. Perform duties associated with warehouse and tool room operation; that is, receiving, shipping, locating, storing and indexing equipment and records.

_____ Date _____ Signature, Maintenance Engineer

- 5. Demonstrate the ability to operate cranes, fork lifts, trucks, and any other plant equipment used for transporting vehicle.

_____ Date _____ Signature, Maintenance Engineer

FORM M-5

6. Demonstrate the ability to properly and safely tag out equipment.

Date

Signature, Maintenance Engineer

7. Demonstrate the ability to apply those principles learned in the General Employee Radiological Health & Safety Training on-the-job. Specifically, demonstrate the ability to:

- a. Control the spread of contamination
- b. Minimize one's own radiation exposure
- c. Properly use personnel monitoring equipment
- d. Decontaminate both personnel and equipment

Date

Signature, Maintenance Engineer

8. Shipping of Radioactive Materials

Demonstrate the ability to perform duties related to minimizing, shipping handling and disposal of radioactive material in accordance with the PNPS procedure for handling of radioactive material and within the DOT and NRC requirements.

Date

Signature, Maintenance Engineer

9. Successfully complete the following Training Modules:

<u>Module #</u>	<u>Module Name</u>	<u>Rev.</u>	<u>Date</u>	<u>Signature, Nuclear Training Specialist</u>
MM-1	Mathematics for Repairman	_____	_____	_____
MM-2	General Physics	_____	_____	_____
MM-3	Heat Transfer	_____	_____	_____
MM-4	Corrosion Chemistry	_____	_____	_____
MM-5	Properties of Materials	_____	_____	_____
MM-6	Mechanical and Electrical Print Reading	_____	_____	_____
MM-7	Tools	_____	_____	_____
MM-8	Rigging, Scaffolding and Cranes	_____	_____	_____
MM-9	Mechanical Equipment and Components	_____	_____	_____
	9.1 pumps and fans	_____	_____	_____
	9.2 valves and piping	_____	_____	_____
	9.3 heat exchangers	_____	_____	_____
	9.4 filters, traps, strainers	_____	_____	_____
	9.5 turbines	_____	_____	_____
	9.6 compressors	_____	_____	_____
	9.7 heating, ventilation, air conditioning equipment	_____	_____	_____
	9.8 snubbers, hangers, restraints	_____	_____	_____
	9.9 cranes	_____	_____	_____
MM-10	Communication Skills Development	_____	_____	_____

FORM M-5

9. Continued

<u>Module #</u>	<u>Module Name</u>	<u>Rev.</u>	<u>Date</u>	<u>Signature, Nuclear Training Specialist</u>
MM-11	Reactor Familiarization			
MM-48	Electrical Theory			
MM-49	Transformers			
MM-50	Motors and Generators			
MM-51	Electronics			
MM-52	Print and Schematic Reading			
MM-53	Electrical Control and Protection Devices			
MM-54	Electrical Measurement and Test Equipment			
MM-55	Safe and Proper use of Electrician Tools			
MM-56	Electrical Conduit, Cable and Wire			
MM-58	Battery Testing and Servicing			
MM-59	Circuit Breaker and Contactor Maintenance			
MM-60	Motor Maintenance			
MM-61	Generator and Transformer Maintenance			
MM-62	Switchgear and Bus Maintenance			
MM-63	Motor Operated Valve Maintenance			

FORM M-5

10. Successfully complete the following PNPS System Training Modules:

<u>Module #</u>	<u>Module Name</u>	<u>Rev.</u>	<u>Date</u>	<u>Signature, Nuclear Training Specialist</u>
MM-14	Reactor Recirculation	_____	_____	_____
MM-15	Reactor Cleanup	_____	_____	_____
MM-16	Main Steam	_____	_____	_____
MM-17	Condensate	_____	_____	_____
MM-18	Condensate Demineralizers	_____	_____	_____
MM-19	Feedwater	_____	_____	_____
MM-20	Condenser Cooling Water	_____	_____	_____
MM-21	Service Water	_____	_____	_____
MM-22	Demineralized Water	_____	_____	_____
MM-23	Reactor Building Closed Loop Cooling	_____	_____	_____
MM-24	Turbine Building Cooling Loop Cooling	_____	_____	_____
MM-25	Radwaste Systems	_____	_____	_____
MM-26	Spent Fuel Pool Cooling	_____	_____	_____
MM-27	High Pressure Core Injection	_____	_____	_____
MM-28	Reactor Core Injection Cooling	_____	_____	_____
MM-29	Reactor Heat Removal	_____	_____	_____
MM-30	Containment Spray	_____	_____	_____
MM-31	Air Ejector and Offgas	_____	_____	_____
MM-32	Reactor Building Ventilation	_____	_____	_____
MM-33	Turbine Building Ventilation	_____	_____	_____

10. Continued

<u>Module #</u>	<u>Module Name</u>	<u>Rev.</u>	<u>Date</u>	<u>Signature, Nuclear Training Specialist</u>
MM-34	Service Air Systems	_____	_____	_____
MM-35	TIP System	_____	_____	_____
MM-36	Process Monitoring System	_____	_____	_____
MM-37	Area Radiation Monitoring System	_____	_____	_____
MM-38	Reactor Vessel Internals	_____	_____	_____
MM-39	Turbine Generator	_____	_____	_____
MM-40	PNPS Switchyard	_____	_____	_____
MM-41	AC Distribution	_____	_____	_____
MM-42	DC Distribution	_____	_____	_____
MM-43	CRD System	_____	_____	_____
MM-44	Primary and Secondary Containment	_____	_____	_____
MM-45	SBGT System	_____	_____	_____
MM-46	Fuel Pool Cooling System	_____	_____	_____
MM-47	Diesels	_____	_____	_____

11. Qualification as a Nuclear Mechanic (Electrical) Certified Complete.

_____	_____
Date	Signature, Maintenance Engineer
_____	_____
Date	Signature, Chief Maintenance Engineer
_____	_____
Date	Signature, Technical Training Group Leader

Return Completed Form to the Nuclear Training Department

3.3 Technical Group Training

Objective

The objective of Technical Group Training is to provide for the indoctrination and training of Technical Group Personnel as necessary to assure that suitable job proficiency is achieved and maintained.

Program Requirements

<u>Training Requirements Satisfied</u>	<u>Requirement Summary</u>
1. a) Regulatory Guide 1.8, (ANSI N18.1, Section 5.3.4)	Requirements for Technical Training
b) Regulatory Guide 1.70,38, Section 13.2.2.2	
2. a) 10CFR50, Appendix B, Criteria II (ANSI N18.7, Section 3.3)	Job Related Quality Assurance Training
3. a) 10CFR50, Appendix B, Criteria II (ANSI N18.7, Section 5.2.10) (ANSI N45.2.3, Section 2.4)	Housekeeping and Cleanliness Control Training
4. a) 10CFR50, Appendix B, Criteria II b) 10CFR50, Appendix B, Criteria V	Indoctrination in proper use of applicable procedures.
5. a) 10CFR50, Appendix B, Criteria III b) 10CFR50, Appendix B, Criteria VI (ANSI N18.7, Section 5.2.15)	Indoctrination in procedures utilized to keep current on applicable design changes/modifications

3.3.1 Initial Technical Group Training

3.3.1.1 Program Description

Technical Group Training is conducted under the cognizance of the Chief Technical Engineer utilizing the Technical Group Training Forms. The Technical Group Training is completed using the following forms:

- T-1 Technical Group General Indoctrination
- T-2 Qualification Requirements for Nuclear Technicians

The Chief Technical Engineer will normally delegate the maintenance of training responsibilities to the Reactor Engineer. This individual will then insure that the required training for the individual under their control is completed.

All individuals reporting into the Technical Group first complete the General Indoctrination, Form T-1. This indoctrination will be conducted by the Chief Technical Engineer or his/her designated representative. Following completion of Form T-1, individuals will complete the additional training forms, by participating in on-the-job activities under the direction of appropriately personnel and, finally, by demonstrating to their supervisors their ability to meet the specific qualification requirements.

Any training conducted, such as: on-the-job formal presentations on a particular piece of equipment, or procedures, etc., would be documented on Form G-2, "PNPS Training Attendance Form".

Initial Technical Group Training, as conducted utilizing the Technical Group Training Forms, are designed to ensure that Technical Group personnel receive the necessary indoctrination and then demonstrate their ability to perform as a technician in their particular specialty.

3.3.1.1.1 Nuclear Technician

All Nuclear Technicians are required to complete Forms T-1 and T-2.

Qualification requirements for Nuclear Technicians are accomplished utilizing on-the-job training under the cognizance of the Reactor Engineer. As the individual demonstrates competence in specific job-related areas, satisfactory performance is documented by the Reactor Engineer. Nuclear Technician qualification requirements shall be completed within a time period specified by the Group Leader after the individual's assignment to the Nuclear Technician position.

3.3.1.2 Program Schedule

Initial Technical Group Training is conducted on a schedule specified by the Chief Technical Engineer. Training will be conducted on-the-job utilizing the Technical Group Training Checklist.

Initial Technical Group Training shall be completed within a time period specified by the Group Leader after the individual's assignment to a Technical Group position.

3.3.1.3 Program Responsibilities

Responsibilities for Initial Technical Group Training are summarized below:

3.3.1.3.1 Senior Nuclear Training Specialist

The Senior Nuclear Training Specialist is responsible for:

1. Overseeing implementation of the initial Technical Group Training Program
2. Maintaining custody of all Technical Group Training Records

3.3.1.3.2 Chief Technical Engineer

The Chief Technical Engineer is responsible for:

1. Implementing initial Technical Group Training
2. Conducting or designating a representative to complete Technical Group General Indoctrination using Form T-1 for all new Technical Group employees.
3. Deleting specific group qualification requirements when an individual's experience or other special factors indicate that the requirements are met or exceeded.
4. Certifying the qualification of all non-management individuals in the Technical Group.

3.3.1.3.3 Reactor Engineer

The Reactor Engineer is responsible for:

1. Conducting training as specified by the Chief Technical Engineer.

2. Qualifying "Nuclear Technicians" utilizing Form T-2.

3.3.1.4 Program Documentation

The Senior Nuclear Training Specialist is responsible for maintaining the training record of each individual assigned to the Technical Group. Each training record should contain the following documentation as appropriate:

Documentation

General Employee Training

GET-1, PNPS General Employee Training Checklist
(with written quiz, if administered)

GET-2, PNPS General Employee Retraining Record
(with written quiz)

Initial Departmental Training

G-3, PNPS Employee Experience Record

T-1, Technical, Group General Indoctrination - All

T-2, Nuclear Technicians

3.3.2 Technical Group Retraining

3.3.2.1 Program Description

Technical Group retraining is conducted as considered necessary by the Chief Technical Engineer and Senior Nuclear Training Specialist. For example, training might be considered necessary following the procurement of new equipment and tools. Training sessions can be scheduled for the entire group or only selected individuals. All training shall be documented on PNPS Form G-2 and sent to the Training Group.

3.3.2.2 Program Schedule

Technical Group Retraining is conducted on a schedule specified by the Chief Technical Engineer.

3.3.2.3 Program Responsibilities

3.3.2.3.1 Senior Nuclear Training Specialist

The Senior Nuclear Training Specialist is responsible for:

1. Overseeing implementation of the Technical Group Retraining Program.
2. Together with the Chief Technical Engineer, identifying areas where retraining would be advantageous.
3. Maintaining custody of Technical Group Retraining records.

3.3.2.3.2 Chief Technical Engineer

The Chief Technical Engineer is responsible for:

1. Together with the Senior Nuclear Training Specialist, identifying areas where retraining would be advantageous.
2. Conducting the Technical Group Retraining Program as necessary.

3.3.2.4 Program Documentation

The Chief Technical Engineer is responsible for documenting Technical Group Retraining on Form G-2, "PNPS Training Attendance Form," and sending this form to the Training Department.

PNPS
 Technical Group
General Indoctrination

Name _____

General Indoctrination

Complete an indoctrination on the procedures and instructions which are applicable to the Technical Group that implement the Quality Assurance Program. This indoctrination will include the following:

- | | | |
|-----|-----------|---|
| 1. | 1.1.1 | Station Organization and Responsibility |
| 2. | 1.2.1 | Operations Review Committee |
| 3. | 1.3.2 | Special Orders |
| 4. | 1.3.4 | Procedures |
| 5. | 1.3.6 | Adherence to Technical Specifications |
| 6. | 1.3.7 | Records |
| 7. | 1.3.8 | Document Control |
| 8. | 1.3.9* | Reports |
| 9. | 1.3.13 | Plant Design Changes |
| 10. | 1.3.14 | Indoctrination and Training |
| 11. | 1.3.16 | Conduct of Personnel in Control Room |
| 12. | 1.3.23* | Preparation of Safety Evaluations |
| 13. | 1.3.24 | Failure and Malfunction Reports |
| 14. | 1.3.26* | Response to Deficiency Reports |
| 15. | 1.4.5 | PNPS Tagging Procedure |
| 16. | 1.4.6 | Housekeeping |
| 17. | 1.5.3 | Maintenance Requests |
| 18. | 1.5.7 | Unplanned Maintenance |
| 19. | 3.M.1-1* | Preventive Maintenance |
| 20. | 3.M.1-1.1 | Instrument and Control |
| 21. | 1.5.9 | Temporary Modifications |
| 22. | 3.M.1-5 | Procurement of Items and Services |
| 23. | 3.M.1-7.1 | Handling and Storage of Material |
| 24. | 3.M.1-8* | Disposition of Non-Conforming Material |
| 25. | 3.M.1-9 | Identification and Control of Material |
| 26. | 3.M.1-10 | Calibration and Control of Maintenance
Tools and Equipment |
| 27. | 3.M.2-1 | Instrument Record System |
| 28. | 3.M.2-8.2 | Pressure Working Standards Calibration |
| 29. | 8.1 | Periodic Surveillance Test |

 Date Completed

 Signature, Chief Technical Engineer

Requirements Satisfied: a) 10CFR, Appendix B
 b) ANSI N18.7
 c) BEQAM, Volume II

Return Completed Form to Training Dept.

 Date Completed

 Signature, Sr. Nuclear Trng. Specialist

*Management Only

PNPS
QUALIFICATION REQUIREMENTS FOR NUCLEAR TECHNICIANS

Name _____ SS# _____

Reactor Engineering Theory

A. Plant Systems

Demonstrate a knowledge and understanding of each of the following topics for each of the plan systems listed.

- a. Basic Function
- b. Basic Operation
- c. Relation to Station or Core Performance
- d. Emergency Functions, if applicable

	<u>Date</u>	<u>Signature, Reactor Engineer</u>
1. LPRM	_____	_____
2. APRM	_____	_____
3. TIPS	_____	_____
4. RBM	_____	_____
5. RWM	_____	_____
6. Process Computer	_____	_____

B. Basic Reactor Performance

Demonstrate a knowledge and understanding of each of the following topics:

	<u>Date</u>	<u>Signature, Reactor Engineer</u>
1. Basic Reactor Physics	_____	_____
a. Keffectives	_____	_____
b. Fission Process	_____	_____
c. Reactivity Control	_____	_____
d. Fission Product Poison	_____	_____

	<u>Date</u>	<u>Signature, Reactor Engineer</u>
2. Radioactive Buildup and Decay	_____	_____
3. Regulatory Requirements	_____	_____
a. 10CFR20	_____	_____
b. PNPS RE Related Tech. Specs.	_____	_____
4. Reactor Operation	_____	_____
a. Critically	_____	_____
b. Heat-up	_____	_____
c. Steady State Operation	_____	_____
d. Xenon Transients	_____	_____
5. Core Performance	_____	_____
a. MCPR	_____	_____
b. MAPLHGR	_____	_____
c. CMPF	_____	_____
d. CMFLPD	_____	_____
C. Fuel Accounting		
1. Fuel Inventory Procedure	_____	_____
2. Fuel Handling Activities	_____	_____
D. Data Collection and Reduction Techniques	_____	_____
1. Plant Instrumentation	_____	_____
2. Process Computer	_____	_____
a. Functional Programs	_____	_____
b. BOP Programs	_____	_____
c. NSS Programs	_____	_____
E. Responsibilities and Authority of Nuclear Technician in Interdepartmental Relations	_____	_____

	<u>Date</u>	<u>Signature, Reactor Engineer</u>
F. Pilgrim Nuclear Power Station Operations Manual	_____	_____
1. Volume 9.0	_____	_____
2. Volume 4.0	_____	_____
3. Selected OPER Procedures	_____	_____
Training Evaluation (Check One)		
Quiz: Written _____	Oral _____	

Date Passed _____

Examiners Signature

Reactor Engineering Technical Skills

Perform each of the following operations/calculations under the supervision of a qualified Nuclear Technician (Reactor Engineer) in compliance with applicable Station Procedures.

A. Plant Performance Calculations

1. Demand and Interpret the following computer programs:
 - a. P-1
 - b. P-2
 - c. OD-1, OD-2, OD-3, OD-4, OD-5, OD-6
 - d. OD-7, OD-8, Special Log Functions
 - e. Valve Print and Display Functions

Date	Signature, Reactor Engineer
------	-----------------------------

2. Collect Data for and conduct:

- a. Manual Heat Balance
- b. Jet Pump Calibration
- c. MCPR, MAPLHGR, PHF, TPF

Date	Signature, Reactor Engineer
------	-----------------------------

B. Special Process Computer Functions

1. Execute Security Drum Strip
2. Reinitialize Computer and Run Program OD-15
3. Load a RWM Sequence
4. Edit OD-10 Options, OD-12

Date Signature, Reactor Engineer

C. Fuel Accounting

- 1. Prepare MBA Transfer Form
- 2. Prepare proper Fuel Accounts
- 3. Distribute Fuel Burnup Information

Date Signature, Reactor Engineer

D. Prepare Monthly and Semi Monthly Data Transmittals to General Electric Fuel Warranty Department.

Date Signature, Reactor Engineer

E. Bucle

- 1. Monthly Data Update
- 2. Obtain Core Performance Surveillance

Date Signature, Reactor Engineer

The Candidate has successfully completed the qualification program and is therefore considered qualified as a Nuclear Technician.

Date Signature, Reactor Engineer

Date Signature, Chief Technical Engineer

Date Signature, Sr. Nuclear Training Specialist

Return completed form to the Training Department

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3.4 Training Group

Objective

The objective of Methods Compliance and Training Group Training is to provide indoctrination and training of personnel as necessary to assure that suitable job proficiency is achieved and maintained.

Program Requirements

<u>Training Requirements Satisfied</u>	<u>Requirement Summary</u>
1. a) Regulatory Guide 1.70.38, Section 13.2.2.2	Requirements for Training
2. a) 10CFR50, Appendix B, Criteria II (ANSI N18.7, Section 3.3)	Job Related Quality Assurance
3. a) 10CFR50, Appendix B, Criteria II (ANSI N18.7, Section 5.2.10) (ANSI N45.2.3, Section 2.4)	Housekeeping and Cleanli- ness Control Training
4. a) 10CFR50, Appendix B, Criteria II	Indoctrination in Proper Use of Applicable
b) 10CFR50, Appendix B, Criteria V	Procedures
5. a) 10CFR50, Appendix E, Criteria III	Indoctrination in Procedures Utilized to
b) 10CFR50, Appendix B, Criteria VI (ANSI N18.7, Section 5.2.15)	Keep Current on Applicable Design Changes/Modification
6. USNRC letter from Mr. H. Denton, Director Office of Nuclear Reactor Regulation - Dated March 28, 1980 ---to all Power Reactor Applicants and Licensees	Qualifications of Reactor Operators

3.4.1 Training Group Initial Training

3.4.1.1 Program Description

Training Group Training is conducted under the cognizance of the Group Leader on Form A-1, Training Group Training. All personnel assigned to the Training Group are required to complete this Form.

Any formal on-the-job training that Training Group participate in should be documented on Form G-2, PNPS Training Attendance Form, and sent to the Training Group.

Vendor training will normally be conducted for Training Group personnel in selected areas. Vendor training should be documented in Section IV of Form G-3, PNPS Employee Experience Record.

3.4.1.2 Program Schedule

Training Group training is conducted on a schedule specified by the Group Leader. The Training Group training indoctrination shall be completed within a time period specified by the Group Leader after the individual's assignment to the Training Group.

3.4.1.3 Program Responsibilities

Responsibilities for initial Training Group training are summarized below:

3.4.1.3.1 Senior Nuclear Training Specialist

The Senior Nuclear Training Specialist is responsible for:

1. Overseeing implementation of the initial Training Group training program.
2. Maintaining custody of all Training Group training records.
3. Deleting specific departmental qualification requirements when an individual's experience or other special factors indicate that the requirements are met or exceeded.

3.4.1.3.2 Training Group Leader

The Group Leader is responsible for:

1. Implementing initial Training Group training.
2. Conducting the "General Indoctrination" portion of the Training Group training Form for all new personnel.

3.4.1.4 Program Documentation

The Senior Nuclear Training Specialist is responsible for maintaining the training record of each person assigned to the Training Group. Each training record should contain the following documentation as appropriate:

Documentation

General Employee Training

GET-1, PNPS General Employee Training

Checklist (with written quiz if administered)

GET-2, PNPS General Employee Retraining Record

(with written quiz)

Initial Departmental Training

G-3, PNPS Employee Experience Record

A-1, Training Group Training Checklist - All

A-2, Training Group Training Checklist for Clerical Personnel

3.4.2 Training Group Retraining

3.4.2.1 Program Description

Training Group retraining is conducted for group personnel as considered necessary by the Group Leader and/or Senior Nuclear Training Specialist.

3.4.2.2 Program Schedule

Group retraining is conducted on a schedule specified by the Group Leader.

3.4.2.3 Program Responsibilities

3.4.2.3.1 Senior Nuclear Training Specialist

The Senior Nuclear Training Specialist is responsible for:

1. Overseeing implementation of group retraining program.
2. Together with the Group Head, identify areas where retraining would be advantageous.
3. Maintain custody of group retraining records.

3.4.2.3.2 Training Group Leader

The Group Leader is responsible for:

1. Together with the Senior Nuclear Training Specialist, identify areas where retraining would be advantageous.
2. Conducting the group retraining program as necessary.

3.4.2.4 Program Documentation

The Group Leader is responsible for documenting group retraining on Form G-2, "PNPS Training Attendance Form", and returning this form to the Training Group.

3.4.3 Qualifications of Instructors

Training Center and Facility Instructors who teach systems, integrated responses, transient and simulator courses shall demonstrate their competence to NRC by successful completion of a Senior Operator Examination.

Instructors shall be enrolled in the requalification program for operations personnel as described in this Training Manual to assure they are cognizant of current operating history, problems, and changes to procedures and administrative limitations.

TRAINING GROUP
GENERAL INDOCTRINATION

Name _____

General Indoctrination

Complete an indoctrination on the procedures and instructions which are applicable to the Methods, Compliance and Training Group that implement the Quality Assurance Program. This indoctrination will include the following:

- | | | |
|-----|---------|---|
| 1. | 1.1.1 | Station Organization and Responsibilities |
| 2. | 1.2.1 | Operations Review Committee |
| 3. | 1.3.2 | Special Orders |
| 4. | 1.3.4 | Procedures |
| 5. | 1.3.6 | Adherence to Technical Specifications |
| 6. | 1.3.7 | Records |
| 7. | 1.3.8 | Document Control |
| 8. | 1.3.9 | Reports |
| 9. | 1.3.13 | Plant Design Changes |
| 10. | 1.3.14 | Indoctrination and Training |
| 11. | 1.3.16 | Conduct of Personnel in Control Room |
| 12. | 1.3.23 | Preparation of Safety Evaluation |
| 13. | 1.3.24 | Failure and Malfunction Reports |
| 14. | 1.3.26 | Response to Deficiency Reports |
| 15. | 1.4.5 | Tagging Procedure |
| 16. | 1.5.3 | Maintenance Requests |
| 17. | 1.5.5 | Cutting and Welding Permit |
| 18. | 1.5.9 | Temporary Modifications |
| 19. | 3.M.1-5 | Procurement of Items and Services |
| 20. | 3.M.1-8 | Disposition of Non-Conforming Material |
| 21. | 8.1 | Periodic Surveillance Tests |

- Requirements Satisfied: a) 10CFR50, Appendix B
b) ANSI N18.7
c) BEQAM, Volume II

Date Completed

Signature, SR Nuclear Training Specialist

Return completed form
to the Training Department

TRAINING GROUP
FOR CLERICAL PERSONNEL

Name _____

General Indoctrination

Complete an indoctrination on the procedures and instructions which are applicable to the Methods, Compliance and Training Group that implement the Quality Assurance Program. This indoctrination will include the following:

1.1.1	Station Organization and Responsibility
1.2.1	Operations Review Committee
1.3.4	Procedures
1.3.6	Adherence to Technical Specifications
1.3.7	Records
1.3.8	Document Control
1.3.9	Reports
1.3.14	Indoctrination and Training
1.3.16	Conduct of Personnel in Control Room

Approved Office Procedures
Document Control Center Practices
BECO Correspondence
Basic Typing Format
Administrative Filing
Telephone Answering
Use of Reproduction Equipment

Requirements Satisfied: a) 10CFR50, Appendix B
b) ANSI N18.7
c) BEQAM, Volume II

Date Completed

Signature SR Nuclear Training Specialist

Return completed form to
the Training Department

3.5 Radiological Group Training

Objective

The objective of the Radiological Group training is to provide for the indoctrination and training of the Radiological Group Personnel as necessary to assure that suitable job proficiency is achieved and maintained.

Program Requirements

Training Requirements Satisfied

1. a) Regulatory Guide 1.8,
(ANSI N18.1, Section 5.3.4)
- b) Regulatory Guide 1.70.38
(Section 13.2.2.2)
2. a) 10CFR50, Appendix B, Criteria II
(ANSI N18.7, Section 3.3)
3. a) 10CFR50, Appendix B, Criteria II
(ANSI N18.7, Section 5.2.10)
(ANSI N45.2.3, Section 2.4)
4. a) 10CFR50, Appendix B, Criteria II
b) 10CFR 50, Appendix B, Criteria VI
5. a) 10CFR50, Appendix B, Criteria III
b) 10CFR50, Appendix B, Criteria VI
(ANSI N18.7, Section 5.2.15)

Requirements Summary

Requirements for Technical Training

Job Related Quality Assurance Training

Housekeeping and Cleanliness Control Training

Indoctrination in Proper Use of Applicable Procedures

Indoctrination in procedures utilized to keep current on applicable design changes/modifications

3.5.1 Initial Radiological Group Training

3.5.1.1 Program Description

Radiological Group training is conducted under the cognizance of the Chief Radiological Engineer utilizing the appropriate training forms. Training is completed using the following forms:

R-1 General Indoctrination

R-2 Qualification Requirements for "Health Physics Technicians"

R-3 Qualification Requirements for "Chemical Technicians"

R-4 Qualification Requirements for "Contractor Health Physics Personnel"

R-5 Qualification Requirements for "Health Physics Records Clerks"

The Chief Radiological Engineer will normally delegate the maintenance of training responsibilities to a Senior Health Physics or Senior Chemical Engineer. These individuals will then ensure that the required training for individual(s) under their control is completed.

All individuals (except contractor personnel) reporting into the Radiological Group must first complete the "General Indoctrination", Form R-1. This indoctrination will be conducted by the Chief Radiological Engineer or his designated representative. Following completion of Form R-1, individuals will complete the training qualification requirements by participating in on-the-job activities under the direction of appropriately experienced personnel, and by demonstrating to their supervisors or a Nuclear Training Specialist their ability to meet the specific qualification requirements.

Any training conducted, such as: on-the-job, formal presentations on a particular piece of equipment, or procedures, etc., should be documented on Form G-2 "PNPS Class Attendance Record".

Initial Radiological Group training is designed to ensure that Radiological Group personnel receive the necessary indoctrination and then to demonstrate their ability to perform in their particular speciality.

3.5.1.1.1 Health Physics Technicians

The Health Physics training for personnel employed at Pilgrim Station is divided into three categories:

- A. Boston Edison Health Physics Technician
- B. Contractor Health Physics Technician
- C. Individual(s) who may be considered qualified in Radiation Procedures of PNPS Technical Specification 5.2.B.4, Section 4 of the Training Manual.

Health Physics Technician Program

The goal of the Health Physics Technician qualification program is to provide newly assigned candidates with the required depth of background necessary to accomplish Health Physics functions during routine operations, maintenance, or emergency conditions.

Each newly assigned Health Physics Technician will complete Form R-2 "Qualification Requirements for Health Physics Technicians". The candidate will prepare himself by self-study and/or attend a formal training session (as provided) to meet each requirement to the satisfaction of the examiner.

The qualification is comprised of five major sections. The content of each section is as follows:

Section A. Plant Systems

This section is designed to determine if the candidate has the required knowledge of the various station systems of radiological concern.

Section B. Basic Radiation Protection

This section is designed to determine if the candidate has the required knowledge of basic radiation physics and radiological controls.

Section C. Pilgrim Station Procedures

This section is designed to determine if the candidate has the required knowledge of the operating procedures applicable to health physics.

Section D. Health Physics Technician Qualification Practical Requirements

This section provides for the determination of practical, hands-on ability. At the discretion of the examiner, (Health Physics Supervisor or Nuclear Training Specialist) satisfactory completion may be by one of the following:

- a. (D) Discuss - the candidate must discuss, to the satisfaction of the examiner, the operation described by the requirement. This discussion should include, as a minimum, the applicable procedure(s), required authorization, emergency actions, notifications, and documentation (written test may be utilized).
- b. (O) Observe - the candidate must actually be observed by the examiner while performing the operation described by the requirement, and should successfully answer any applicable questions posed by the examiner.

Section E. Training Evaluation

The candidate must successfully complete a written and/or oral examination on topics drawn from Sections A, P, and C. This examination will be prepared by the Nuclear Training Department in coordination with Health Physics Supervisory Personnel and given to the candidates after completion of these sections of their qualification.

3.5.1.2 Contractor Health Physics Personnel

Contractor Health Physics Personnel are assigned to the station to supplement the regular full-time Health Physics staff during periods of peak work loads. Contractor Health Physics Technicians are often well trained and have extensive experience in Health Physics at several different facilities. Before Contractor Health Physics Technicians can be assigned to positions in the Health Physics organization, they should be schooled in the PNPS Health Physics procedures and their level of knowledge and depth of experience in Health Physics must be determined.

If Contractor Health Physics Personnel are required for an anticipated long-term (any period greater than approximately 6 months during a non-outage condition) assignments at PNPS, they will be required to complete the qualification outlined for Boston Edison Health Physics Technicians, Form R-2. "When the R-2 Form is

completed for contractor Health Physics Personnel the requirements of the R-4 Form are null and void. Any previously completed R-4 Forms for contractor personnel may be destroyed if a R-2 Form has been completed for the individuals involved."

Newly reporting Contractor Health Physics Personnel will complete Section A of the Contractor Health Physics Personnel Qualification Form R-4 and successfully complete the General Employee Training.

Health Physics Supervisory Personnel should contact a minimum of one of the references listed by the prospective contractor Health Physics candidate with regard to:

1. Professional Competence
2. Supervisory Ability, Experience
3. Work Experience
4. Disciplinary Problems or other pertinent occurrences.

The Health Physics Supervisor will summarize the results of the reference search in Section B of the Contractor Health Physics Personnel Qualification Form (R-4).

After or before completing Section B, the Health Physics Supervisor will interview the prospective contractor Health Physics candidate with regards to:

1. Accuracy of Resume
2. Attitude
3. Determine Level

(i.e., Senior, Junior, etc., section F)

The Health Physics Supervisor will then summarize the interview in Section B of the Contractor Health Physics Personnel Qualification Form R-4.

The Contractor Health Physics Technician will be taught by Boston Edison's Health Physics procedures in accordance with the guidance of the recommended Lesson Plan, or appropriate variations thereto, for Health Physics Contractors (attachment B). After completion of this course the Health Physics Contractor Technician should be given a test and the score recorded in Section D along with the examiner and date on the Contractor Health Physics Personnel Qualification Form R-4.

The Health Physics Supervisor will also fill out Section F of the Contractor Health Physics Qualification Form R-4 stating if he or she is ANSI qualified and at what level. This can be accomplished by the following ways:

- a) Resume
- b) NRC, FORM 4
- c) Interview

Section G of the Contractor Health Physics Qualification Form R-4 should be completed by a Health Physics Supervisor and signed by the Chief Radiological Engineer or his designee.

Because of the possible immediate need for Contractor Health Physics Technicians, the Health Physics Supervisor may give an oral exam followed by a written exam as soon as possible. Section E of form R-4 will then be filled out. This requires the signature (approval) of the Chief Radiological Engineer or his designee, and the appropriate procedure numbers (which the Contractor Health Physics Technician was briefed on) checked off on Attachment A, Form R-4.

The Contractor Health Physics Technician is then ready for job assignment after he or she has satisfactorily completed all sections of the Contractor Health Physics Qualification Form R-4. Failure of a candidate to complete the qualification (R-4) is cause for rejection.

3.5.1.2.1 Chemistry Technician Program

The goal of the Chemistry Technician Program is to provide newly assigned candidates with the practical skills necessary to perform chemistry functions during routine and emergency conditions.

All Chemical Technicians are required to complete Forms R-1, R-2, and R-3. Qualification proficiency is obtained utilizing on-the-job training under the cognizance of the Chief Radiological Engineer.

As the newly assigned Chemistry Technician demonstrates competency on a particular task the chemistry supervisor/engineer will sign the appropriate block on the Qualification Card R-3. This signature qualifies the Chemistry Technician to perform that specific task without direct supervision.

Program Description

At a frequency specified by the Technical Training Group Leader and the Chief Radiological Engineer or with changes to Form R-3 (Chemistry Technician Qualification Record) the performance of each Chemistry Technician will be reviewed against the performance requirements of Form R-3. This review will be performed by the Sr. Chemical Engineer and a Nuclear Training Specialist.

The purpose of this review is to identify any performance or knowledge deficiencies that may have developed since initial qualification. Any such deficiencies noted will be incorporated into an individualized retraining program. The review and retraining program will be documented on a standard office memorandum (BECO Form 6346).

3.5.1.2.2 Health Physics Records Clerks

All Health Physics Records Clerks are required to complete Forms R-1 and R-5. Qualification is obtained utilizing classroom and on-the-job training under the cognizance of the Chief Radiological Engineer. As the individual demonstrates competence in specific job related areas, satisfactory performance is documented by the examiner. Qualification requirements shall be completed in a time period specified by the Group Leader after the individual's assignment as a Health Physics Records Clerk.

3.5.1.2.2.1 Qualification Methods for Health Physics Records Clerks

A. Qualification Card

The qualification card is used to document proficiency in the knowledge and skills necessary to perform competency as a Health Physics Records Clerk.

B. Modules

All modules referenced on the qualification card shall undergo the standard module review process.

C. Task Checklist

A task checklist is a training module used to direct on-the-job training.

A task checklist generally has three sections.

The task description briefly discusses the purpose and general sequence of the task.

The training checklist describes the method and sequence the trainee should follow while learning to perform the task. In this section, the trainee and examiner both initial the task checklist to indicate that the step described in the task checklist was practiced.

The examiner checklist describes the method by which the trainee's proficiency in the task is tested. After the final sign off by the examiner, the Health Physics Supervisor assigned to Health Physics Records will examine the task checklist, verify to his satisfaction that the trainee is competent and sign off the task checklist and qualification card.

D. Initial Qualification

The Health Physics Supervisor assigned to Health Physics Records may sign off experienced Health Physics Clerks as qualified without the Health Physics Clerk completing the task checklist.

The Health Physics Supervisor shall at a minimum ensure that by personal observation of the H.P. Clerk performing the task that the H.P. Clerk performs this task as defined in the task checklist.

E. Examiner

Any Health Physics Supervisor or Health Physics Records Clerk who is signed off on his/her qualification card for a task is considered a qualified examiner in that task.

F. Partial Qualification

When full qualification of a Health Physics Clerk is not required (e.g. a contractor clerk assigned to work at the dosimetry issue desk only) the Health Physics Supervisor may choose to qualify such a clerk only to the level needed to perform the assignment.

In such a situation the Health Physics Supervisor shall note on the H.P. Records Task Checklist and Qualification Card;

1. The assigned job(s) of the clerk and
2. Those sections of the qualification card/task checklist used to establish competency in the job(s).

3.5.1.3 Radiological Group Program

Initial Radiological Group training, for permanent BECo employees, is conducted on a schedule specified by the Chief Radiological Engineer. Training will be conducted on-the-job and/or in classroom instruction utilizing the "Radiological Group General Indoctrination Form R-1.

Initial Radiological Group training shall be completed within a time period specified by the Group Leader after the individual's assignment to a Radiological Group position. General Indoctrination shall be completed within ten (10) working days of the initial assignment date and the job specific qualification requirements shall be completed within six (6) months of the initial assignment date.

3.5.1.3.1 Technical Training Supervisor

The Technical Training Supervisor is responsible for maintaining custody of all Radiological Group Training Records.

3.5.1.3.2 Chief Radiological Engineer

The Chief Radiological Engineer is responsible for:

1. Implementing initial radiological group training.
2. Conducting or designating a representative to conduct the "General Indoctrination" portion of the "Radiological Group General Indoctrination Form R-1" for all new radiological group employees.
3. Delegating specific group qualification requirements when an individual's experience or other special factors indicate that the requirements are met or exceeded.
4. Certifying the qualification of all non-management individual's in the radiological group.

3.5.1.4 Program Documentation

General Employee Training

GET-1, PNPS General Employee Training Checklist (with written quiz, if administered).

GET-2, PNPS General Employee Retraining Record (with written quiz).

Initial Department Training

G-3 PNPS Employee Experience Record

R-1 General Indoctrination

R-2 Qualification Requirements for "Health Physics Technicians"

R-3 Qualification Requirements for Chemical Technicians

R-4 Qualification Requirements for "Contractor Health Physics Personnel Qualification Form".

R-5 H.P. Records Qualification Card

3.5.2 Radiological Group Retraining

3.5.2.1 Program Description

Radiological Group retraining is conducted as considered necessary by the Chief Radiological Engineer. For example, a noted trend in improper contamination surveys might require a training period on this subject. Training might also be considered necessary following the procurement of new equipment. Training sessions can be scheduled for the entire group or only selected individuals. All training shall be documented on PNPS Form G-2 and sent to the Training Department.

3.5.2.2 Program Schedule

Radiological Group Retraining is conducted on a schedule specified by the Chief Radiological Engineer.

3.5.2.3 Program Responsibilities

3.5.2.3.1 Technical Training Supervisor

The Technical Training Supervisor is responsible for:

1. Identifying areas where retraining could be advantageous
2. Maintaining custody of the Radiological Group retraining records

3.5.2.3.2 Chief Radiological Engineer

The Chief Radiological Engineer is responsible for ensuring that the radiological group retraining is conducted as necessary.

3.5.2.4 Program Documentation

The Instructor is responsible for documenting the radiological group retraining on Form G-2, "PNPS Class Attendance Record", and sending this form to the Training Department with an attached course outline if one does not already exist.

PNPS
RADIOLOGICAL GROUP
GENERAL INDOCTRINATION

Name _____

General Indoctrination

Complete an indoctrination on the procedures and instructions which are applicable to the Radiological Group that implement the Quality Assurance Program. This indoctrination will include the following:

- | | | |
|-----|----------|---|
| 1. | 1.1.1 | Station Organization and Responsibility |
| 2. | 1.2.1 | Operations Review Committee |
| 3. | 1.3.2* | Special Orders |
| 4. | 1.3.4 | Procedures |
| 5. | 1.3.6 | Adherence to Technical Specifications |
| 6. | 1.3.7 | Records |
| 7. | 1.3.8 | Document Control |
| 8. | 1.3.9* | Reports |
| 9. | 1.3.13 | Plant Design Changes |
| 10. | 1.3.14 | Indoctrination and Training |
| 11. | 1.3.16 | Conduct of Personnel in Control Room |
| 12. | 1.3.23* | Preparation of Safety Evaluations |
| 13. | 1.3.24 | Failure and Malfunction Reports |
| 14. | 1.3.26* | Response to Deficiency Reports |
| 15. | 1.4.5 | PNPS Tagging Procedure |
| 16. | 1.4.6 | Housekeeping |
| 17. | 1.5.3 | Maintenance Request |
| 18. | 1.5.7 | Unplanned Maintenance |
| 19. | 3.M.1-1* | Preventative Maintenance |
| 20. | 1.5.9 | Temporary Modifications |
| 21. | 3.M.1-5 | Procurement of Items and Services |
| 22. | 8.1 | Periodic Surveillance Test |

Requirements Satisfied: a) 10CFR50, Appendix B
b) ANSI N18.7
c) BEQAM, Volume II

Date Completed

Signature, Chief Radiological Engineer

Return complete form to the Training Department

Date Completed

Signature, Technical Training Supervisor

*Management Only

PNPS

QUALIFICATION REQUIREMENTS FOR HEALTH PHYSICS TECHNICIANS

Name _____

A. Plant Systems

Demonstrate a knowledge and understanding of basic function, operation, potential for contamination and potential changes in contamination of radiation levels due to operational changes for each of the following systems. Any qualified Health Physics Technician may perform the training. This will be verified by the Radiological Group Supervisor, who will sign in the examiner section.

<u>SYSTEM</u>	<u>DATE</u>	<u>SIGNATURE EXAMINER</u>
1. Reactor Recirculation	_____	_____
2. Reactor Cleanup	_____	_____
3. Main Steam	_____	_____
4. Condensate	_____	_____
5. Condensate Demineralizers	_____	_____
6. Feedwater	_____	_____
7. Condenser Cooling Water	_____	_____
8. Service Water	_____	_____
9. Demineralized Water	_____	_____
10. Reactor Building Closed Loop Cooling	_____	_____
11. Turbine Building Closed Loop Cooling	_____	_____
12. Radwaste	_____	_____
13. Spent Fuel Pool Cooling	_____	_____
14. High Pressure Core Injection	_____	_____
15. Reactor Core Injection Cooling	_____	_____
16. Reactor Heat Removal	_____	_____
17. Containment Spray	_____	_____
18. Air Ejector and Offgas	_____	_____
19. Reactor Building Ventilation	_____	_____

	<u>Date</u>	<u>Signature, Examiner</u>
20. Turbine Building Ventilation	_____	_____
21. Service Air System	_____	_____
22. TIP System	_____	_____
23. Process Monitoring System	_____	_____
24. Area Radiation Monitoring System	_____	_____
25. Containment High Radiation Monitoring System	_____	_____
26. Post Accident Sampling System	_____	_____

H. Basic Radiation Protection

Demonstrate a knowledge and understanding of each of the following topics:

	<u>DATE</u>	<u>SIGNATURE-EXAMINER</u>
1. Basic Nuclear Physics	_____	_____
2. Radioactive Buildup and Decay	_____	_____
3. Radiation Interactions with Matter	_____	_____
4. Biological Effects of Radiation	_____	_____
5. Shielding	_____	_____
6. Detection and Measurement of Rad	_____	_____
7. Regulatory Requirements		
a. 10CFR19	_____	_____
b. 10CFR20	_____	_____
c. 10CFR100	_____	_____
d. Division 8 Regulatory Guides	_____	_____
e. PNPS HP Related Tech. Specs.	_____	_____
f. DOT Radioactive Material Regs.	_____	_____
g. NUREG 0041	_____	_____
8. Contamination and Decontamination	_____	_____
a. Sources	_____	_____
b. Preventing Spread	_____	_____
c. Protective Clothing	_____	_____
d. Personnel Decon.	_____	_____
e. Area Decon.	_____	_____
f. ALARA	_____	_____
9. External Exposure		
a. Whole Body	_____	_____
b. Extremity	_____	_____
c. Skin	_____	_____
d. Limits	_____	_____
e. Exposure Guides	_____	_____
f. ALARA	_____	_____
Internal Exposure		
a. Operation of the whole body counter	_____	_____
b. Calibration of the whole body counter	_____	_____
c. MPC body burden	_____	_____
d. Body burden	_____	_____

	<u>DATE</u>	<u>SIGNATURE-EXAMINER</u>
e. Respiratory Protection Devices	_____	_____
f. Operation of the face mask fitting machine	_____	_____
g. Operation of the face mask testing machine	_____	_____
10. Contamination, Radiation, Airborne Activity Survey Technique	_____	_____
11. Responsibility and Authority of the H.P./ALARA Technician in Interdepartmental Relations	_____	_____
12. Contamination Control		
a. Establish contamination controls on a job site.	_____	_____
13. Counting Room Operations		
a. Ge(li) operations	_____	_____
b. Ge(⁶⁰ Co) calibration	_____	_____
c. Canberra Low Bkg counter	_____	_____
d. Tennelec low Bkg counter	_____	_____
e. SAC 4	_____	_____
f. MS-3 (1)	_____	_____
g. Radon-Thoron Evaluation	_____	_____
h. Record Keeping	_____	_____
14. Establish RWP requirements for a maintenance job.	_____	_____

	<u>OPERATION</u>		<u>CALIBRATION</u>	
	<u>Date</u>	<u>Signature Examiner</u>	<u>Date</u>	<u>Signature Examiner</u>
a. Lab Counters				
1. Daily Source checks	_____	_____	_____	_____
2. Control Charts	_____	_____	_____	_____
3. Source decay calibration	_____	_____	_____	_____
4. X ² test	_____	_____	_____	_____
b. Portable Instruments				
1. E-400	_____	_____	_____	_____
2. PIC-6A	_____	_____	_____	_____
3. PAC-4G	_____	_____	_____	_____
4. PRM-4A	_____	_____	_____	_____
5. RO2 - (2A)	_____	_____	_____	_____
6. CP-5	_____	_____	_____	_____
7. CP-5MU	_____	_____	_____	_____
8. RM-14	_____	_____	_____	_____

	<u>DATE</u>	<u>SIGNATURE EXAMINER</u>	<u>DATE</u>	<u>SIGNATURE EXAMINER</u>
9. RM-16	_____	_____	_____	_____
10. E-520	_____	_____	_____	_____
11. PNR-4	_____	_____	_____	_____
12. PNC-4	_____	_____	_____	_____
13. Teletector (All)	_____	_____	_____	_____
14. Teledose	_____	_____	_____	_____

Training Evaluation (check one)

Quiz (Written) _____ (Oral) _____
 Quiz Grade _____ Date Passed _____

_____ Date _____ Signature, Examiner

(Contractor Health Physics Technician ONLY) The candidate met the requirements of Form R-4 on _____ These records (Form R-4) are null and void.

_____ Date _____ Signature, Chief Radiological Engineer

The candidate has successfully completed the qualification program and is therefore considered qualified as a Health Physics Technician.

_____ Date _____ Signature, Sr. Health Physics Engineer

_____ Date _____ Signature, Chief Radiological Engineer

Return the completed form to the Nuclear Training Department

_____ Date _____ Signature, Technical Training Group Leader

CHEMISTRY TECHNICIAN QUALIFICATION CARD
FOR ROUTINE DUTIES

Name _____

Date Started _____

A. QUALIFICATION REQUISITES

	<u>Chemistry Supervisor</u> <u>Signature</u>	<u>Date</u>
1. Complete Form R1 (General Indoctrination)	_____	_____
2. Complete Form R2 (Qualification Requirements for Health Physics Technicians)	_____	_____

B. QUALIFICATION FOR THE PERFORMANCE OF ALL ROUTINE DUTIES AS SET FORTH IN SECTIONS C-H CERTIFIED COMPLETE

_____	_____
Date	Chemistry Supervisor/Engineer
_____	_____
Date	Sr. Chemical Engineer
_____	_____
Date	Chief Radiological Engineer
_____	_____
Date	Technical Training Group Leader

C. DATA LOGGING

Demonstrate the ability to correctly obtain and log the following data, and update associated data trend plots as called for.

	<u>Chemistry Supervisor Signature</u>	<u>Date Qualified</u>
1. M.S. 24-hr. release: from BOP or PRM recorder	_____	_____
2. R.B.V. 24-hr. release: from BOP or PRM recorder	_____	_____
3. SJAE offgas activity	_____	_____
4. M.S. activity	_____	_____
5. R.B.V. activity	_____	_____
6. A.O.G. Post-treat activity	_____	_____
7. Reactor water conductivity	_____	_____
8. A cleanup demin. conductivity	_____	_____
9. B cleanup demin. conductivity	_____	_____
10. Stator-cooler demin. outlet conductivity	_____	_____
11. Generator outlet conductivity	_____	_____
12. Main steam lines activities	_____	_____
13. RBCCW activity	_____	_____
14. C-19 ratemeter readings	_____	_____
15. Hotwell conductivity	_____	_____
16. C.D.E. Bank conductivity	_____	_____
17. H.P. Feedwater conductivity	_____	_____
18. Rx. power level, Mwt	_____	_____
19. Feedwater filter flows	_____	_____
20.	_____	_____
21.	_____	_____
22.	_____	_____

D. OPERATION OF INSTRUMENTATION

Demonstrate the ability to correctly operate the following equipment in accordance with the applicable procedure/work instruction.

	<u>Chemistry Supervisor Signature</u>	<u>Date Qualified</u>
1. Balsbaugh conductivity monitors	_____	_____
2. Leeds & Northrup conductivity bridge	_____	_____
3. Altex ph meter	_____	_____
4. Zeromatic ph meter	_____	_____
5. Analytical balance	_____	_____
6. Top loading balance	_____	_____
7. HACH lab turbidimeter	_____	_____
8. HACH spectrophotometer	_____	_____
9. Perkin-Elmer spectrophotometer	_____	_____
10. Total organic carbon analyzer	_____	_____
11. Gamma well counter	_____	_____
12. NMC proportional counter	_____	_____
13. Canberra Geli multi-channel analyzer	_____	_____
14. Feedwater metals samplers	_____	_____
15.	_____	_____
16.	_____	_____
17.	_____	_____

E. QUALITY CONTROL

Demonstrate the ability to perform the following functions according to the applicable procedures/work instructions.

	<u>Chemistry Supervisor Signature</u>	<u>Date Qualified</u>
1. Calibration Checks		
a. Geli multi-channel analyzer	_____	_____
b. Gamma well counters	_____	_____
c. NMC proportional counters	_____	_____
d. Conductivity monitors	_____	_____
e. Balances	_____	_____
f. Primary containment leak detection monitor	_____	_____
g. A.O.G. hydrogen analyzers	_____	_____
h. Chloride	_____	_____
i. Silica	_____	_____
j.	_____	_____
k.	_____	_____
l.	_____	_____
m.	_____	_____
n.	_____	_____
o.	_____	_____
2. Calibrations		
a. pH meters	_____	_____
b. Lab turbidimeter	_____	_____
c. Total organic carbon analyzer	_____	_____
d. Primary containment hydrogen analyzers	_____	_____

Chemistry Supervisor
Signature

Date
Qualified

E. QUALITY CONTROL (Continued)

e. Primary containment oxygen analyzers

f. A.O.G. hydrogen analyzers

g. Chloride

h. Silica

i.

j.

k.

l.

m.

3. Chemical Shelf-Life Program

a. Check all dated chemicals for expired shelf life

b. Prepare and/or standardize boron standard

c. Prepare and/or standardize $KMnO_4$ standard

d. Prepare and/or standardize $Hg(NO_3)_2$ standard

e. Prepare and/or standardize $AgNO_3$ standard

f. Prepare buffers for pH meters

g.

h.

i.

j.

k.

F. PREVENTIVE MAINTENANCE

Demonstrate the ability to perform preventive maintenance on the following equipment in accordance with the appropriate procedure/work instruction.

	<u>Chemistry Supervisor Signature</u>	<u>Date Qualified</u>
1. Geli multi-channel analyzer	_____	_____
2. Liquid nitrogen addition	_____	_____
3. NWT metals sampler	_____	_____
4. Conductivity cells	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____

G. SAMPLING

Demonstrate the ability to obtain the following samples according to the appropriate procedures/work instructions.

	<u>Chemistry Supervisor Signature</u>	<u>Date Qualified</u>
1. Reactor water	_____	_____
2. Reactor water cleanup effluents	_____	_____
3. Fuel pool demineralizer influent and effluent	_____	_____
4. Hotwell	_____	_____
5. Condensate demineralizers' effluents	_____	_____
6. Treated water holdup tanks	_____	_____
7. Chemical waste tanks	_____	_____
8. Clean waste tanks	_____	_____
9. Monitor tanks	_____	_____
10. Miscellaneous tanks	_____	_____
11. Radwaste demineralizer influent and effluent	_____	_____
12. Standby liquid control tank	_____	_____
13. Reactor building closed cooling water	_____	_____
14. Turbine building closed cooling water	_____	_____
15. Station heating system	_____	_____
16. Makeup demineralizers effluents	_____	_____
17. Salt service water	_____	_____
18. Condensate storage tanks	_____	_____
19. Demineralized water storage tank	_____	_____
20. Main stack effluents	_____	_____

G. SAMPLING (Continued)

	<u>Chemistry Supervisor Signature</u>	<u>Date Qualified</u>
21. Reactor building vent effluents	_____	_____
22. Primary containment leak detection monitor	_____	_____
23. Offgas at the SJAEs	_____	_____
24. Offgas at the recombiner outlet	_____	_____
25. Offgas at the AOG vault outlet	_____	_____
26. Torus	_____	_____
27. Fire water storage tanks	_____	_____
28. City water	_____	_____
29. Neutralizing sump	_____	_____
30. Diesel generators fuel oil	_____	_____
31. Collection of effluent gas moisture	_____	_____
32. Condenser vacuum scavenger tank	_____	_____
33. MUD carbon filters' influents and effluents	_____	_____
34.	_____	_____
35.	_____	_____
36.	_____	_____
37.	_____	_____
38.	_____	_____

H. CHEMICAL AND RADIOCHEMICAL ANALYSES

Demonstrate the ability to safely and correctly perform the indicated analysis in accordance with the applicable procedure/work instruction.

	<u>Chemistry Supervisor Signature</u>	<u>Date Qualified</u>
1. Chemical		
a. Conductivity	_____	_____
b. pH	_____	_____
c. Chloride	_____	_____
d. Silica	_____	_____
e. Turbidity	_____	_____
f. Dissolved oxygen	_____	_____
g. Residual chlorine	_____	_____
h. Sodium pentaborate	_____	_____
i. Sodium nitrite	_____	_____
j. Zinc	_____	_____
k. Feedwater corrosion products	_____	_____
l. Total organic carbon	_____	_____
m. Boron	_____	_____
n. Neutralizing sump for discharge	_____	_____
o. Water determination in fuel oil tanks	_____	_____
p.	_____	_____
q.	_____	_____
r.	_____	_____
s.	_____	_____
t.	_____	_____

H. CHEMICAL AND RADIOCHEMICAL ANALYSES (Continued)

	<u>Chemistry Supervisor Signature</u>	<u>Date Qualified</u>
2. Radiochemical		
a. Iodines, short and long	_____	_____
b. Gross gamma	_____	_____
c. Gross beta-gamma	_____	_____
d. Liquid isotopics	_____	_____
e. Liquid radwaste for discharge	_____	_____
f. Solid radwaste for shipment	_____	_____
g. Effluent gas isotopic	_____	_____
h. Particulate filters	_____	_____
i. Charcoal cartridges	_____	_____
j. Offgas, short and long	_____	_____
k.	_____	_____
l.	_____	_____
m.	_____	_____
n.	_____	_____
o.	_____	_____

CONTRACTOR HEALTH PHYSICS
PERSONNEL QUALIFICATION FORM

NAME _____

S.S. # _____

COMPANY _____

DATE _____

A. WORK HISTORY

Please list a minimum of two work related references from the nuclear power plants at which you have worked. Person(s) referenced must be from Plant Health Physics Supervision.

PLANT	REFERENCE (NAME & TITLE)	PERIOD OF EMPLOYMENT
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____

B. RESULTS OF REFERENCE SEARCH

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

C. EMPLOYEE INTERVIEW

D. Test Score _____

Examiner: _____ Date _____

E. Oral Exam: Passed Failed

Oral Examiner _____ Date _____

Qualified _____
(Health Physics Supervisor)

Approval: _____
(Chief Radiological Engineer or Designee)

f. ANSI # Qualified as; Sup.V. Sr. Jr.

(HP Supervisor)

G. Approved to Work Independently

Date Health Physics Supervisor

Approved to Issue RWP's

Date Health Physics Supervisor

Approved to Function as Supervisor

Date Chief Radiological Engineer or Designee

H. General Employee Training

Completed: _____
Date

Technical Training Supervisor

ATTACHMENT A

DATE _____

EXAMINEE'S NAME _____

S.S.# _____

Circle the appropriate procedure numbers that were covered with the Health Physics Contractor.

6.1	012	013	201	202	203
	024	200	207	208	204
	205	206	021	022	

6.2	001	002	003	010	011
	062	110	111	161	162
					060

6.3	011	060	110	160	163
-----	-----	-----	-----	-----	-----

6.4	105	060	120	090	065	238
	069	085	226	130	076	067
	079	278	280	270	092	215
	115	061	286	281	110	283
	284	074	293	287	272	
	290	086	062	294	282	

6.5	006	069	085	281	282
	067	079	286	287	065
	115	215	061	062	076
	210	276	074	090	170
	284	285	086	160	271
	010	060	130	270	283
					272

6.6	010	062	064	110	112
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6.7	010	115	117	109	111
	105	116	108	110	114

ATTACHMENT A

6.9	060	160	167	168	174
	165	161	162	163	175
				164	176

6.10	001	002	003	004	005
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Briefed by: _____

ATTACHMENT B

LESSION PLAN

HEALTH PHYSICS CONTRACTORS

Day No. 1

0800-0815 N/A INTRODUCTION AND PASSING OUT OF HANDOUTS

OBJECTIVE:

0815-0830 N/A HEALTH PHYSICS ORGANIZATION AND STATION

OBJECTIVE: To explain the organizational structure, and how and where they fit in.

0830-0845 N/A HEALTH PHYSICS RULES AND REGULATIONS

OBJECTIVE: To explain how long and when breaks and lunches are, who to report to for 1) lateness and 2) sickness and H.P. policy towards.

0845-0955 6.1-020 HEALTH PHYSICS GUIDELINES

OBJECTIVE: To familiarize H.P. contractors with PNPS's limits.

0955-1010 N/A BREAK

OBJECTIVE: N/A

1010-1045 6.1-012 ACCESS CONTROL FOR HIGH RADIATION AREAS

OBJECTIVE: To define how access to high radiation areas greater than 1000 mrem per hour will be controlled.

1045-1130 6.1-021 MPC - HOURS DETERMINATION

OBJECTIVE: To define the process by which exposure to airborne radioactive materials, other than noble gas activity, is determined and the records system is used.

i.e., show how to fill out sheets.

1130-1200 6.1-022 RADIATION WORK PERMIT

OBJECTIVE: To provide instruction and guidance for the issuance and use of a radiation work permit (RWP).
i.e., how to fill out and to read.

1200-1300 N/A LUNCH

OBJECTIVE: N/A

1300-1330 6.1-023 EXTENDED RADIATION WORK PERMIT ISSUANCE AND USE

OBJECTIVE: To provide detailed instructions for the issuance and use of.

1330-1400 6.1-024 RADIOLOGICAL POSTING OF AREAS OF THE STATION

OBJECTIVE: To establish guidelines that require certain areas that contain certain radiological conditions can be posted so that personnel entering the area are aware of the conditions and can take appropriate actions.

1400-1415 N/A BREAK

OBJECTIVE: N/A

1415-1445 6.1-205 RADIATION EXPOSURE PERMIT CARDS

OBJECTIVE: To define the use and how to fill out the radiation exposure permit cards (Rep. cards).

1445-1500 6.1-206 COLLECTION OF POCKET DOSIMETER DATA DURING OUTAGE CONDITIONS

OBJECTIVE: To outline the steps to be followed to collect pocket dosimeter data;

- 1) especially during an outage
- 2) how it relates to rep cards.

ATTACHMENT B

1530-1530 6.2-060 SELF-READING DOSIMETERS ASSIGNMENTS AND USAGE

OBJECTIVE: To define the manner in which self-reading dosimeters will be issued and used at PNPS.

1530-1600 N/A QUESTION AND ANSWER PERIOD

OBJECTIVE: N/A

ATTACHMENT B

LESSION PLAN

HEALTH PHYSICS CONTRACTORS

Day No. 2

- 0800-0815 N/A QUESTION AND ANSWER PERIOD OR QUIZ
OBJECTIVE: N/A
- 0815-0830 6.2-110 TLD WHOLE BODY BADGE ISSUANCE AND USAGE
OBJECTIVE: To define the manner in which thermoluminescent dosimetry (TLD) badges will be issued and used at PNPS.
- 0830-0945 6.2-011 LOST, DAMAGED OR OFF-SCALE DOSIMETER OR TLD INVESTIGATION
OBJECTIVE: To provide a detail guide for actions to be performed when a direct reading dosimeter reads off-scale, damaged, or is lost, or when a TLD badge is damaged or lost.
i.e., 1) how to fill out forms, 2) examples.
- 0945-1000 N/A BREAK
OBJECTIVE: N/A
- 1000-1200 6.2-001 PNPS RADIATION EXPOSURE CONTROL PROGRAM
OBJECTIVE: To define the personnel radiation control program that will be followed at PNPS to maintain personnel radiation exposures to levels as low as reasonable achievable and within the limits of state and federal regulations.
- 1200-1300 N/A LUNCH
OBJECTIVE: N/A

1300-1315 6.2-002 PNPS EXPOSURE CONTROL PROGRAM FOR VISITORS
OBJECTIVE: To define the exposure control program for visitors at PNPS.

1315-1330 6.10-004 ALARA - DECONTAMINATION
OBJECTIVE: To delineate when decontamination efforts should be considered prior to preventive or corrective maintenance.

1330-1345 6.10-003 ALARA - RADIOLOGICAL DISCREPANCY REPORTS
OBJECTIVE: To enable all station personnel to identify problems that contribute to high contamination levels and/or dose rates, that can be corrected by various methods at PNPS.

1345-1410 6.10-002 ALARA - PRE-JOB PLANNING
OBJECTIVE: To delineate the responsibilities and actions to be taken by station personnel when work is planned at PNPS.

1410-1425 N/A BREAK
OBJECTIVE: N/A

1425-1450 6.1-207 RELEASE OF MATERIAL FROM POTENTIALLY CONTAMINATED AREAS OF THE PLANT
OBJECTIVE: To provide direction for releasing material from potentially contaminated areas of the plant.

1450-1510 6.2-161 ADMINISTRATION OF THE INTERNAL EXPOSURE MONITORING PROGRAM
OBJECTIVE: To familiarize contractor H.P. personnel with the PNPS internal exposure monitoring program.
i.e., nasal smears, whole body counting, urin and/or fecal samples

1510-1545 6.3-160 AIRBORNE ACTIVITY SURVEY

OBJECTIVE: To provide a detailed guide for performing various types of sampling for airborne radioactive material.
i.e., and how it fits in with procedure No. 6.1-021
MPC-Hours Determination.

1545-1600 N/A QUESTION AND ANSWER PERIOD

OBJECTIVE: N/A

ATTACHMENT B

LESSON PLAN

HEALTH PHYSICS CONTRACTORS

Day No. 3

0800-0815 N/A QUESTION AND ANSWER PERIOD OR QUIZ

OBJECTIVE: N/A

0815-0845 6.3-110 CONTAMINATION SURVEY TECHNIQUES

OBJECTIVE: To provide a detailed guide for performing contamination surveys.

0845-1000 6.3-060 RADIATION SURVEY TECHNIQUES

OBJECTIVE: To provide a detailed guide for performing various types of radiation surveys and selecting the appropriate equipment with which to perform the surveys.

i.e., surface and contact dose rates

- 1) surface dose rate determinations
- 2) examples

1000-1015 N/A BREAK

OBJECTIVE: N/A

1015-1100 6.3-011 SURVEY DOCUMENTATION

OBJECTIVE: To provide a detailed guide for the documentation of radiation contamination, airborne, and other health physics surveys.

1100-1115 6.5-010 HEALTH PHYSICS INSTRUMENTATION CALIBRATION FREQUENCY

OBJECTIVE: To familiarize personnel with PNPS's calibration frequency.

1435-1450 6.4-271 OPERATION OF THE EBERLINE MINI-SCALER MODEL MS-2

OBJECTIVE: To provide a guide for the operation of the Eberline
Mini-Scaler Model MS-2

1450-1600 N/A SURVEY INSTRUMENTATION

OBJECTIVE: To familiarize H.P. personnel with the different types
and uses of the instrumentation used at PNPS.
i.e., show and tell

ATTACHMENT B

- 1115-1130 6.4-210 OPERATION OF THE RAS-1 AIR SAMPLER
- OBJECTIVE: To provide a guide for the operation of the Eberline RAS-1 air sampler.
i.e., show and tell
- 1130-1145 6.4-215 OPERATION OF THE RADCO MODEL H809V AIR SAMPLER
- OBJECTIVE: To provide a guide for the operation of the RADCO Model H809V air sampler.
i.e., show and tell
- 1145-1300 N/A LUNCH
- OBJECTIVE: N/A
- 1200-1330 6.4-226 OPERATION OF THE EBERLINE AMS-2 CONTINUOUS AIR SAMPLER
- OBJECTIVE: To define guidelines as to the operation of the Eberline continuous air monitor Model AMS-2
i.e., show and tell
- 1330-1350 6.4-281 OPERATION OF LAPEL SAMPLERS
- OBJECTIVE: To define the operation of Lapel Samplers.
- 1350-1420 6.4-270 OPERATION OF THE EBERLINE MINI-SCALER MODEL MS-1
- OBJECTIVE: To provide a guide for the operation of the Eberline Mini-Scaler Model MS-1
- 1420-1435 N/A BREAK
- OBJECTIVE: N/A

ATTACHMENT B

LESSON PLAN

HEALTH PHYSICS CONTRACTORS

Day No. 4

- 0800-0815 N/A QUESTION AND ANSWER PERIOD OR QUIZ
OBJECTIVE: N/A
- 0815-0915 6.4-287 OPERATION OF THE TENNELEC ALPHA-BETA COUNTER
OBJECTIVE: To familiarize and provide a preliminary procedure for the initialization and operation of the Tennelec L135100 Low Background Alpha-Beta Automatic Counting System.
- 0915-1000 6.4-282 OPERATION OF CANBERRA 7700 COUNTING SYSTEM
OBJECTIVE: To familiarize and define the operations of the Canberra Low Background Alpha and Beta Counting System.
- 1000-1015 N/A BREAK
OBJECTIVE: N/A
- 1015-1200 6.7-101 PNPS RESPIRATORY PROTECTION PROGRAM
OBJECTIVE: To familiarize personnel with PNPS Respiratory Protection Program.
- 1200-1300 N/A LUNCH
OBJECTIVE: N/A
- 1300-1400 6.7-101 PNPS RESPIRATORY PROTECTION PROGRAM (continued)
OBJECTIVE: See above.

1400-1415 N/A BREAK

OBJECTIVE: N/A

1415-1430 6.7-010 RECEIPT AND STORAGE OF CLEAN PROTECTIVE CLOTHING

OBJECTIVE: To establish the manner in which clean protective clothing is handled at PNPS.

1430-1445 6.7-011 HANDLING OF STEP-OFF PAD CONTAINERS

OBJECTIVE:

1445-1545 6.9-060 RECEIPT OF RADIOACTIVE MATERIAL

OBJECTIVE:

1545-1600 N/A REVIEW (QUESTIONS AND ANSWERS)

OBJECTIVE: N/A

ATTACHMENT B

LESSION PLAN

HEALTH PHYSICS CONTRACTORS

Day No. 5

0800-0815 N/A QUESTIONS AND ANSWERS PERIOD OR QUIZ
OBJECTIVE: N/A

0815-0900 6.9-160 SHIPMENT OF RADIOACTIVE MATERIAL
OBJECTIVE: To familiarize personnel with PNPS's procedure for shipment of radioactive material.

0900-1000 N/A DRESSING AND UNDRESSING PROCEDURES
OBJECTIVE: To familiarize H.P. personnel with the way control points are set up.

1000-1015 N/A BREAK
OBJECTIVE: N/A

1015-1045 N/A DRESSING AND UNDRESSING PROCEDURES (continued)
OBJECTIVE: See above.

1045-1130 N/A QUESTION AND ANSWER PERIOD
OBJECTIVE: To answer questions and tell them about the test.

1130-1300 N/A LUNCH
OBJECTIVE: N/A

1300-1600 N/A PLANT WALK-THRU
OBJECTIVE: To familiarize personnel with the plant, i.e., maps with the different elevations and the associated major Rx components.

ATTACHMENT B

LESSION PLAN

HEALTH PHYSICS CONTRACTORS

Day No. 6

0800-0830 N/A QUESTION AND ANSWERS

OBJECTIVE: N/A

0830-1130 N/A TEST

OBJECTIVE: N/A

H. P. RECORDS QUALIFICATION CARD

Name _____

Date Started: _____

Date Completed: _____

The student has satisfactorily completed the following training modules.

Module	Module Title	Rev. #	H.P. Supervisor Signature/Date	Trainee's Signature/Date
T1	Intro to HP Records	_____	_____	_____
T2	Bio effects of radiation	_____	_____	_____
T3	Radiation Limits	_____	_____	_____
A2	Issuing Dosimetry	_____	_____	_____
A3	Issue Visitors Dosimetry	_____	_____	_____
A4	Maintain exposure files	_____	_____	_____
A5	Exposure evaluation Reports	_____	_____	_____
A6	Logging daily exposure	_____	_____	_____
A7	Computer Data entry	_____	_____	_____
A8	NRC form 4	_____	_____	_____
A9	Assign exposure limits	_____	_____	_____
A10	Process TLD readings	_____	_____	_____
A11	Process upgrades	_____	_____	_____
A12	Inprocess individuals	_____	_____	_____
A13	Terminate an individual	_____	_____	_____

Qualified to Staff Dosimetry Issue Desk

H.P. Supervisor

Date

Qualified H.P. Records Clerk

H.P. Supervisor

Date

Reviewed by

Signature, Chief Radiological Engineer

Date

Reviewed by

Signature, Technical Training
Group Leader

Date

Return completed form to the Training Department

3.6.1 SHIFT TECHNICAL ADVISORS INITIAL GROUP TRAINING

3.6.1.1 PROGRAM DESCRIPTION

Shift Technical Advisors Group Training is conducted under the cognizance of the OSS&P Group Leader on Forms STA-1 and STA-2, Shift Technical Advisors Group Training. All personnel assigned to the Shift Technical Advisors Group are required to complete this form.

Any formal on-the-job training that the Shift Technical Advisors Group participate in should be documented on Form G-2, P^NS Training Attendance Form, and sent to the Training Group.

Vendor training may be conducted for the Shift Technical Advisors Group personnel in selected areas. Vendor training should be documented in Section IV of Form G-3, PNPS Employee Experience Record.

Candidates who have successfully completed STA training at another nuclear power station can transfer credit for non-plant specific subjects by approval of OSS&P Group Leader and the Nuclear Training Manager. (Verification of successfully completed course work should be documented, or the training filer should include an explanation as to why such documentation could not be obtained and the basis for giving credit for the subjects).

3.6.1.1.1 SHIFT TECHNICAL ADVISOR

The goal of the Shift Technical Advisors qualification program is to prepare newly assigned candidates with the required depth of knowledge necessary to accomplish the Shift Technical Advisor's function during routine operations and abnormal or emergency conditions. Form STA-2 is used to document this training.

3.6.1.2 PROGRAM SCHEDULE

Initial Shift Technical Advisors group training is conducted on a schedule specified by the OSS&P Group Leader.

The Shift Technical Advisors initial group training shall be completed within a time period specified by the Group Leader after the individual's assignment to the Shift Technical Advisors Group.

3.6.1.3 PROGRAM RESPONSIBILITIES

Responsibilities for initial Shift Technical Advisor group training are summarized below.

3.6.1.3.1 NUCLEAR TRAINING MANAGER

The Nuclear Training Manager is responsible for:

1. Overseeing implementation of the initial Shift Technical Advisors group training program and ensuring the quality of training provided by vendors.
2. Maintaining custody of all Shift Technical Advisors group personnel training records.
3. Certifying the qualification of individuals in the Shift Technical Advisors group.

3.6.1.3.2 NUCLEAR TRAINING SPECIALIST

The Nuclear Training Specialist is responsible for:

1. Completion of Form STA-2 for general indoctrination for all new Shift Technical Advisors group personnel.
2. After consulting with the OSS&P Group Leader, develop training schedules necessary to accomplish initial Shift Technical Advisors group training.
3. Conduct the Shift Technical Advisors training program as necessary to maintain a sufficient compliment of Shift Technical Advisors.
4. Preparing and grading examinations for all Shift Technical Advisors.
5. Maintaining all initial Shift Technical Advisor training program documentation as specified in Section 3.6.1.4.

3.6.1.3.3 ON SITE SAFETY AND PERFORMANCE GROUP LEADER (OSS&P-GL)

The OSS&P Group Leader is responsible for:

1. Assuring that personnel assigned to the Shift Technical Advisors group are adequately trained to perform their job functions in a safe and efficient manner.
2. Working with the Nuclear Training Specialist to develop Shift Technical Advisor training schedules and approving STA training course content.
3. Documenting the completion of certain specific training form requirements.
4. Certifying the qualification of individuals in the Shift Technical Advisors group.

3.6.1.4 PROGRAM DOCUMENTATION

The Nuclear Training Specialist is responsible for maintaining the training record of each individual assigned to the Shift Technical Advisors group. Each training record should contain the following documentation as appropriate:

Documentation

General Employee Training

GET-1-PNPS General Employee Training form (with written quiz, if administered)

STA-1 STA Group General Indoctrination

STA-2 Qualification Requirements for STA's

Copies of quizzes and examinations administered

PNPS

SHIFT TECHNICAL ADVISORS GROUP
GENERAL INDOCTRINATION

Name _____

Complete an indoctrination on the procedures and instructions which are applicable to the Shift Technical Advisors group which will implement the Quality Assurance group. This indoctrination will include the following:

- | | | |
|-----|----------|---|
| 1. | 1.1.1 | Station Organization and Responsibility |
| 2. | 1.2.1 | Operations Review Committee |
| 3. | 1.3.2 | Special Orders |
| 4. | 1.3.4 | Procedures |
| 5. | 1.3.6 | Adherence to Technical Specifications |
| 6. | 1.3.7 | Records |
| 7. | 1.3.8 | Document Control |
| 8. | 1.3.9* | Reports |
| 9. | 1.3.13 | Plant Design Changes |
| 10. | 1.3.14 | Indoctrination and Training |
| 11. | 1.3.16 | Conduct of Personnel in Control Room |
| 12. | 1.3.23* | Preparation of Safety Evaluation |
| 13. | 1.3.24 | Failure and Malfunction Reports |
| 14. | 1.3.26* | Response to Deficiency Reports |
| 15. | 1.4.5 | PNPS Tagging Procedure |
| 16. | 1.4.6 | Housekeeping |
| 17. | 1.5.3 | Maintenance Request |
| 18. | 1.5.7 | Unplanned Maintenance |
| 19. | 3.M.1-1* | Preventative Maintenance |
| 20. | 1.5.9 | Temporary Modifications |
| 21. | 3.M.1-5 | Procurement of Items and Services |
| 22. | 3.M.1-8* | Disposition of Non-Conforming Material |
| 23. | 8.1 | Periodic Surveillance Test |

- Requirements Satisfied: a) 10CFR50, Appendix B
b) ANSI N18.7
c) BEQAM, Volume II

Date Completed _____

Signature, OSS&P -GL _____

Date _____

Signature, Nuclear Training Specialist _____

Date _____

Signature, Nuclear Training Manager _____

* Management Only

Return completed form
to Training Department

PNPS

QUALIFICATION REQUIREMENTS
FOR
SHIFT TECHNICAL ADVISORS

Name _____

A. Prior to Shift Technical Advisor Training

- 1. Meet all qualifications specified in the Shift Technical Advisors job specification.

_____ Date _____ Signature, OSS&P Group Leader

- 2. Complete Form STA-1 - Shift Technical Advisors group training general indoctrination.

_____ Date _____ Signature, Nuclear Training Specialist

B. Shift Technical Advisors Training

(Note: The candidate must receive a passing grade of 70% per section) Contact hours for training in Sections B.1 through B.7 shall be determined based on the previous training records, and assessed need of the STA candidate. Such assessment to be performed by the training department.

- 1. Applied Fundamentals - BWR Specific

Suggested Subject/Topics

Plant Specific Reactor Technology
(including core physics data)

Plant Chemistry and Corrosion Control

Reactor Instrumentation and Control

Reactor Plant Materials

Reactor Plant Thermal Cycle

_____ Quiz Grade

_____ Date _____ Signature, Nuclear Training Specialist

2. Plant Systems

System

Core Standby Cooling Systems

Emergency Electrical Power, AC and DC

Reactor Protection

Reactor Coolant

Reactor Coolant Inventory and Chemistry Control

Containment System (including Containment Cooling)

Closed Cooling Water Systems

Nuclear Instrumentation

Non-Nuclear Instrumentation

Reactor Control

Containment Hydrogen Monitoring and Control

Radioactive Waste Disposal (liquid, gas, solid)

Control Air

Condensate and Main Feedwater

Reactor Vessel Water Level Control

Main Steam

Status Monitoring (including Process Computer)

Seismic Monitoring

Residual Heat Removal

Radiation Monitoring

Plant Ventilation

Main Turbine and Generator

Quiz Grade

Date

Signature, Nuclear Training Specialist

3. Simulator Training

List date, length of time and simulator used for training, (attach certification, if any)

Date

Signature, Nuclear Training Specialist

4. Administrative Controls

Typical Subjects

- Responsibilities for Safe Operation and Shutdown
- Failure and Malfunction Reports
- Use of Procedures
- Plant Modifications
- Shift Relief Turnover and Manning
- Containment Access
- Maintaining Cognizance of Plant Status
- Physical Security
- Control Room Access
- Duties and Responsibilities of the STA
- Radiological Emergency Plan
- Code of Federal Regulations (appropriate sections)
- Plant Technical Specifications (including bases)
- Radiological Control Instructions

Quiz Grade

Date

Signature, Nuclear Training Specialist

5. Management Skills

Typical Areas

Leadership

Interpersonal Communication

Motivation of Personnel

Problem and Decisional Analysis

Command Responsibilities and Limits

Stress

Human Behavior

Quiz Grade

Date

Signature, Nuclear Training Specialist

6. Operating Procedures

Subject

Startup

At Power Operations

Shutdown

Xenon Following While on Standby

S.D. Margin Calculation

Quiz Grade

Date

Signature, Nuclear Training Specialist

7. Transient/Accident Analysis and Emergency Procedures

Subject

Transient and Accident Analyses

Plant Abnormal and Emergency Procedures

Quiz Grade

Date

Signature, Nuclear Training Specialist

8. Formal Education

Prerequisite education considered desirable for successful completion of the advanced coursework is identified below. This coursework may be waived without formal documentation of specific courses completion provided the candidate demonstrates an acceptable level of knowledge by attaining passing grades on the advanced coursework outlined in Section B.1 to B.7 of this document.

- | | | |
|-----------------------|---|---|
| A. <u>Mathematics</u> | Trigonometry, Analytical Geometry, College Algebra | Initials, OSS&P
Group Leader
A. _____ |
| B. <u>Chemistry</u> | Inorganic Chemistry | B. _____ |
| C. <u>Physics</u> | Engineering Physics (heat, mechanics, light sound, electricity and magnetism) | C. _____ |

College Level Fundamental Education

- | | | |
|--------------------------|--|----------|
| D. <u>Mathematics</u> | Engineering mathematics through the introduction to ordinary differential equations and the utilization of Laplace transforms to interpret control response. | D. _____ |
| E. <u>Reactor Theory</u> | Atomic and Nuclear Physics
Statics, through 2-group Diffusion Theory
Dynamics, Point Kinetics, Reactivity Feedback | E. _____ |

F. Reactor Chemistry

Initials, OSS&P
Group Leader

Inorganic Chemistry (as related to reactor systems)
Corrosion - Reaction Rates

F. _____

G. Nuclear Materials

Strength of Materials
Reactor Material Properties
(phase diagrams, fuel densification)

G. _____

H. Thermal Sciences (for nuclear systems)

Thermodynamics

Laws of Thermodynamics
Properties of Water and Steam
Steam Cycles and Efficiency

H. _____

I. Fluid Dynamics

Bernoulli's Equation
Fluid Friction and Head Loss
Elevation Head
Pump and System Characteristics

I. _____

J. Heat Transfer

Methods of Heat Transfer
Boiling Heat Transfer
Heat Exchangers

J. _____

K. Electrical Sciences

Electronics (Circuit theory, digital electronics)
Motors, Generators, Transformers, Switchgear
Instrumentation and Control Theory

K. _____

L. Nuclear Instrumentation and Control

Radiation Detectors
Reactor Instrumentation
Reactivity Control and Feedback

L. _____

M. Nuclear Radiation Protection and Health Physics

Biological Effects
Radiation Survey Instrumentation
Shielding

M. _____

Section 8 completed

_____ Date

_____ Signature, OSS&P Group Leader

9. Recognizing the consequences of sever core damage.

Date

Signature, Nuclear Training Specialist

C. The candidate has successfully completed the qualification program and is therefore qualified as a Shift Technical Advisor.

Date

Signature, Nuclear Training Specialist

Date

Signature, Nuclear Training Manager

Date

Signature, OSS&P Group Leader

3.6.2 SHIFT TECHNICAL ADVISOR REQUALIFICATION

Requalification training for Shift Technical Advisors is an annual program, outline to meet the requirements of NUREG 0737.

3.6.2.1 ANNUAL REQUALIFICATION

The annual STA requalification program is intended to meet the requirements of NUREG 0737 as outlined in Appendix C of that document. In actuality Appendix C is Revision 1 of INPO's Recommendations for Shift Technical Advisors. The section on requalification is 6.9.

A Shift Technical Advisor must successfully complete the requalification program to remain actively fulfilling the STA function. The passing grade for the requalification exam shall be 70%. If an STA does not pass the requalification exam, the individual shall be removed from watch and shall be required to complete an accelerated training program before resuming STA responsibility.

The accelerated training will be provided in areas discovered to be deficient in the judgement of the Training Department with the concurrence of the OSS&P Group Leader.

Annual requalification will consist of a review of transient and accident analysis emphasizing the STA's role in the accident recognition and assessment, and 20 hours of simulator exercises. Specific requirements are included on Form STA-3 "STA Annual Requalification Documentation Sheet."

3.6.2.2 OUTAGE MODIFICATIONS

On a once per refuel cycle basis all STA's shall receive training in changes to plant design, procedures, Technical Specifications and reload characteristics. The duration of this course will be dependent upon material to be covered and may be given in conjunction with such training administered to the Operations Group. Examinations related to refuel cycle training are not required.

Refuel cycle training should be administered prior to cycle startup or as close as practical to the beginning of cycle operation.

3.6.2.3 ABSENCES FROM DUTY

An STA who has been absent from active duty for a period of 30 days but less than 4 months, shall, prior to resuming the function, receive training to ensure that the individual is cognizant of significant procedure and facility changes.

The content of this training shall be approved by the OSS&P Group Leader and may be presented by the Training Group or a designated individual within the Nuclear Organization.

Documentation of such training shall be provided by the individual or organization conducting such training. The documentation is to be retained in the individual STA's record.

An STA who has been absent from active duty for a period longer than 4 months shall, prior to resuming the function, receive appropriate training to ensure competence in the function. This training may constitute all or portions of Annual Requalification Training not including simulator exercises. If the 6 month absence is coincident with a refuel outage, then Outage Modifications Training will also be required.

Normal absence from STA duty such as annual requalification, vacation, shift rotation and specialized training shall not constitute an absence as defined in the preceding paragraphs.

3.6.2.4 SPECIALIZED TRAINING

STA's may receive specialized training in such areas as Emergency plans, Performance Monitoring or other areas intended for professional development. Such specialized training is not considered to be applicable to STA requalification and need not be common to all STA's. Such training will, however be documented in the individual's training records by inclusion of appropriate material. The individual who approves such training will be responsible for forwarding documentation to the training department for inclusion in the records.

3.6.2.5 PROGRAM RESPONSIBILITIES

Program responsibilities for STA requalification are the same as specified in section 3.6.1.3.

3.6.2.6 DOCUMENTATION

The Training Department is responsible for the maintenance of STA training records. This includes documentation maintained in each individual's training record and general requalification files.

3.6.2.6.1 RECORDS

The following requalification training program documentation will be maintained in each individual's training record:

Documentation Forms

STA-3 STA Annual Requalification Documentation Sheet
STA-4 Outage Modifications Documentation Sheet
STA-5 Absence Retraining Documentation Sheet

Other Documentation

Correspondence related to requalification and specialized training, including vendor evaluations or reports.

Examinations

Quizzes administered

GET-2 General Employee Training Record

Name _____

Training Cycle _____ 19__ to _____ 19__
Month Month

1. Review of Abnormal Events

Subject: Review of transient and accident analysis of FSAR events emphasizing the individual STA's role in an accident recognition and assessment.

Objective: To have STA's aware of accident recognition and impact, and to emphasize the STA's duties/responsibilities during such events.

Implementation: This program will incorporate a review of transient and accident analysis. An appropriate review of professional industry events and LER's which had the potential for serious impact will be part of the program. This course may be conducted by the Training Department or contracted to a vendor. In either case detailed records of the course shall be retained in the training files. Such records shall include lecture outlines and examinations. The OSS&P Group Leader shall additionally concur with the course outline.

Exam Grade _____ (70% required for passing)

PASS FAIL (place in accelerated
requalification program
& remove from STA duties)

Date

Signature, Training Specialist

PNPS STA
ANNUAL REQUALIFICATION
DOCUMENTATION SHEET

Review of Abnormal Events - continued

If makeup required: Individual shall successfully pass a makeup exam.

Makeup exam due _____
Date

STA Management informed on _____
Date Signature, Training Specialist

Acknowledged: _____
Date Signature, STA

Date Signature, OSS&P Group Leader

Additional Course work required

Specify: _____

The above course work is acknowledged to be required for successful completion of makeup examination.

Signature, OSS&P Group Leader

Signature, Nuclear Training Manager

Makeup Course Implemented _____
Date

Makeup Exam Complete _____
Date Grade

PASS

Individual to be removed
from duty for additional
training

Date Signature, Training Specialist

Date Signature, OSS&P Group Leader

2. Simulator Exercises

Subject: Simulator exercises related to normal and off normal conditions will be conducted to emphasize the role of the STA.

Objective: To have STA's put into actual practice, principles learned and discussed in the Review of Abnormal Events course.

Implementation: The course shall consist of 20 hours and exercises as specified below should be included. This course may be conducted concurrently by a vendor or in-house with the Abnormal Events Review course. Detailed records including lecture and exercise outlines and a qualitative evaluation of STA performance shall be provided and retained in the individual STA's records. The OSS&P Group Leader shall additionally concur with the course outline.

Simulator Exercises: Utilizing PNPS procedures when possible. This stipulation is dependent on the particular simulator used.

Reactor and Plant Startup
Load Changes and Shutdown
Load Rejection at power
Turbine Trips from Full Power with and without Bypass Capability
Inadvertent MSIV Isolation at Power
Reactor Scram from Full Power
Reactor Pressure Controller Failure
Control Rod Drop Accident at Power and Approaching Critical
Cold Water Injection at Power
Inadvertent Opening of a Relief Valve and Stuck Open Rv
Loss of Main Feedwater at Power
Inadvertent Start of Idle Recirc Pump
Inadvertent Trip of Recirc Pump(s)
LOCA's (large & small breaks)
Loss of Off-site Power
Station Blackout
Loss of Shutdown Cooling

Natural Circulation

Malfunction of Reactor Water Level Indications/Controls

Simulator Evaluation

Acceptable

Unacceptable

Date

Signature, Nuclear Training Specialist

If simulator evaluation is unacceptable follow-up action will be determined by both the Nuclear Training Manager and OSS&P Group Leader concurrently. Such action shall be documented in writing and retained in the individual's files. If the simulator evaluation is unacceptable a report from the training vendor shall be included to explain the reasons for such findings.

PNPS STA
OUTAGE MODIFICATIONS
DOCUMENTATION SHEET

Name _____

Date of previous cycle startup _____

Date of present cycle shutdown _____

Date(s) Outage Modification Training given _____

1. Detail below the subject areas covered in the areas of: Procedure Changes, Plant Design Changes, Technical Specification Changes and Reload Analysis Changes. Alternatively document course outline reference and lecture attendance hours.

<u>Subject</u>	<u>Lecture Hours</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Examination Grade if administered _____

If grade is less than 70%, a makeup exam will be given as soon as possible. If no exam is administered the signature below will document that the individual has successfully completed the course.

Date Nuclear Training Specialist

PNPS STA
ABSENCE RETRAINING
DOCUMENTATION SHEET

Name _____

1. Duration/dates of absence from STA duty and reason:

From _____ To _____

Reason for Absence _____

Signed _____
STA

Date

2. Subjects covered prior to resumption of STA Duty or append course outline or memos.

Signed, OSS&P Group Leader

Training conducted/completed _____

Date

Individual providing training

Reviewed by _____

Nuclear Training Manager

Date

3.7 Station Services Group Training

Objective

The objective of Station Services Group Training is to provide for the indoctrination and training of Station Services Personnel as necessary to assure that suitable proficiency is achieved and maintained.

Program Requirements

All

Training Requirements Satisfied

Requirement Summary

- | | |
|---|--|
| a) 10CFR50, Appendix B, Criteria II (ANSI N18.7, Section 3.3) | Job Related Quality
Assurance Training |
| a) 10CFR50, Appendix B, Criteria II (ANSI N18.7, Section 5.2.10)
(ANSI N45.2.3, Section 2.4) | Housekeeping and Cleanliness
Control Training |
| a) 10CFR50, Appendix B, Criteria II | Indoctrination in proper use applicable procedures |
| b) 10CFR50, Appendix B, Criteria V | |
| a) 10CFR50, Appendix B, Criteria III | Indoctrination in procedures utilized to keep current on applicable design changes/modifications |
| b) 10CFR50, Appendix B, Criteria VI (ANSI N18.7, Section 5.2.15) | |

their new job function under the direction of appropriately experienced personnel and, finally, by demonstrating to their supervisors their ability to meet the specific qualification requirements.

Any formal training conducted on-the-job such as a formal presentation on a particular piece of equipment should be documented on Form G-5, PNPS Training Form.

Vendor Training will be conducted as necessary to develop the proficiency of personnel in selected areas. Vendor Training will be documented on Section IV of Form G-3, PNPS Employee Experience Record.

Initial Station Services Group Training, as conducted utilizing the Station Services Group Training Forms, is designed to ensure that Station Services Personnel receive the necessary indoctrination and training to competently perform their job function.

3.7.1.1.1 Nuclear Plant Attendant

All Nuclear Plant Attendants are required to complete Form SS-2 (Qualification Requirements for "Nuclear Plant Attendants").

Qualification requirements for Nuclear Plant Attendants are accomplished utilizing on-the-job training under the cognizance of the Station Services Group Leader or his designee. As the individual demonstrates competence in specific job-related areas, satisfactory performance is documented by the applicable Boston Edison Supervisor. Nuclear Plant Attendants qualification requirements shall be completed within a time specified by the Group Leader after the individual's assignment to the Nuclear Plant Attendants position.

3.7.1.2 Program Schedule

Initial Station Services Group Training is conducted on a schedule specified by the Station Services Group Leader. Training will be conducted utilizing the Station Services Group Training Forms.

Initial Station Services Group Training shall be completed within a time period specified by the group leader after the individual's assignment to a Station Services Group position.

3.7.1.3 Program Responsibilities

Responsibilities for Initial Maintenance Group Training are summarized below:

3.7.1.3.1 Technical Training Group Leader

The Technical Training Group Leader is responsible for:

1. Overseeing implementation of the Initial Station Services Group Training Program.
2. Maintaining custody of all Station Services Group Training Records.
3. Deleting specific Group Qualification Requirements when an individual's experience or other special factors indicate that the requirements are met or exceeded.
4. Certifying the qualification of all non-management individuals in the Station Services Group.

3.7.1.3.2 Station Services Group Leader

The Station Services Group Leader is responsible for:

1. Implementing Initial Station Services Group Training.
2. Conducting or designating a representative to complete Station Services Group General Indoctrination, for all new Station Services Group Employees.
3. Certifying the qualification of all non-management individuals in the Station Services Group.

3.7.1.3.3 Station Services Group Supervisors

The Station Services Group Supervisors are responsible for:

1. Conducting training as specified by the Station Services Group Leader.
2. Qualifying "Nuclear Plant Attendants" utilizing Form SS-2.

3.7.1.4 Program Documentation

The Technical Training Group Leader is responsible for maintaining the training record of each individual assigned to the Station Group. Each training record should contain the following documentation as appropriate:

Documentation

General Employee Training

GET-1, PNPS General Employee Training Checklist

(with written quiz, if administered)

GET-2, PNPS General Employee Retraining Record

(with written quiz)

Initial Group Training

G-3, PNPS Employee Experience Record

SS-1, Station Services Group Training General Indoctrination

Form SS-2

3.7.2 Station Services Group Retraining

3.7.2.1 Program Description

Station Services Group retraining is conducted as considered necessary by Station Services Group Leader and Technical Training Group Leader. For example, a noted trend in improper packaging of laundry drums might require a training period on this subject. Training might also be considered necessary following the procurement of a piece of equipment with which Station Services Personnel have no familiarity. Training sessions can be scheduled for the entire department, a specific group within the department, or only selected individuals. All training shall be documented on PNPS Training Form G-2 and sent to the Training Group.

3.7.2.2 Program Responsibilities

3.7.2.2.1 Technical Training Group Leader

Technical Training Group Leader is responsible for:

1. Overseeing implementation of the Station Services Group Retraining Program.
2. Together with the Station Services Group Leader, identifying areas where retraining would be advantageous.
3. Maintaining custody of Station Services Group Retraining records.

3.7.2.2.2 Station Services Group Leader

The Station Services Group Leader is responsible for:

1. Together with the Technical Training Supervisor, identifying areas where retraining would be advantageous.
2. Conducting the Station Services Group Retraining Program as necessary.

3.7.2.2.3 Station Services Group Supervisors

The Station Services Group Supervisors are responsible for:

1. Conducting Station Services Group Retraining as specified by the Station Services Group Leader.

3.7.2.3 Program Documentation

The Station Services Group Leader is responsible for documenting Maintenance Group Retraining on Form G-2, "PNPS Training Attendance Form", and sending the form to the Training Group.

PNPS

STATION SERVICES GROUP
GENERAL INDOCTRINATION

Name _____

General Indoctrination

Complete an indoctrination on the procedures and instructions which are applicable to the Waste Management Group.

This indoctrination will include the following:

1. 1.1.1 Station Organization and Responsibility
2. 1.2.1 Operations Review Committee
3. 1.3.4 Procedures
4. 1.3.6 Adherence to Technical Specifications
5. 1.3.7 Records
6. 1.3.8 Document Control
7. 1.3.9* Reports
8. 1.3.14 Indoctrination and Training
9. 1.3.16 Conduct of Personnel in Control Room
10. 1.3.24 Failure and Malfunction Reports

Date_____
Signature, Station Services Group Leader_____
Date completed_____
Signature, Technical Training Group Leader

*Management Only

Return completed form to the Training Department

QUALIFICATION REQUIREMENTS FOR "NUCLEAR PLANT ATTENDANTS"

NAME _____

1. Complete Section I, "General Indoctrination", of the Waste Management Group Training Checklist.

Date

Signature, Station Services Supervisor

2. Meet all qualifications specified in the Nuclear Plant Attendant job specification.

Date

Signature, Station Services Group Leader

3. Demonstrate the ability to apply those principles learned in the General Employee "Radiological Health and Safety Indoctrination" on-the-job. Specifically, demonstrate the ability to:

- a. Control the spread of contamination
- b. Minimize one's own radiation exposure
- c. Properly use personnel monitoring equipment
- d. Decontaminate equipment
- e. Follow the volume reduction plan

Date

Signature, Examiner

4. Demonstrate the ability to perform plant cleaning functions.

5. Demonstrate the ability to maintain the plant grounds including roadways.

6. Demonstrate the ability to use mechanized equipment where necessary to perform heavy lifting of materials, tools and equipment.

7. Demonstrate the ability to use automobiles or trucks to make pick-ups and deliveries of equipment, tools and materials.

7A. Complete Company Mechanized Equip. (forklift) Training.

Date Examiner

8. Demonstrate correct operation of the tool decon unit in accordance with station procedures.

Date Examiner

9. Demonstrate correct operation of the dry cleaning unit in accordance with station procedures.

Date Examiner

10. Demonstrate correct operation of the face mask washing machine in accordance with station procedure 6.7.113.

Date Examiner

11. Demonstrate installation of various shielding methods in accordance with station procedure 6.10-005.

Date Examiner

12. Demonstrate the ability to perform various methods of Decontamination in accordance with station procedure.

Date Examiner

13. Shipment of Radioactive Material

a. Successfully complete the module on Radioactive shipment regulations.

Date Examiner

b. Demonstrate correct techniques for inspecting radioactive waste materials for oil and water and non-compactable trash.

_____ Date

_____ Examiner

c. Complete Dry Radioactive Waste packaging Training (ref. Dry Radioactive Waste packaging Training Guide).

_____ Date

_____ Examiner

d. Complete solid waste compacting training (ref. solid waste compacting training guide).

_____ Date

_____ Examiner

Qualified to work on Radioactive Shipments

_____ Date

_____ Examiner

_____ Date

_____ Sr. Waste Management Supervisor

_____ Date

_____ Station Services Group Leader

8. Qualification as Nuclear Plant Attendant certified complete.

Date

Signature, Waste Management Supervisor

Date

Signature, Station Service Supervisor

Date

Signature, Sr. Waste Management Engineer

Date

Signature, Station Services Group Leader

Date

Signature, Technical Training Group Leader

Return completed form to the Training Department

Dry Radioactive Waste Packaging Training Guide

Student Name

Date Started

Discussion

Discuss with the student the purpose of the Training and a brief overview of what will be covered.

Radiation Safety

Discuss with the student the Health Physics requirements for packaging dry radioactive waste.

Date

Examiner

LSA Box Preparation

A. Using procedure 6.9.174 walk through with the student the preparation of one LSA Box demonstrating procedural requirements, good Health Physics practice and recordkeeping.

Date

Examiner

B. Observe the student preparing LSA Boxes using procedure 6.9.174. Repeat this step until the student has packaged one complete LSA Box without prompts or corrections by the examiner.

Date

Examiner

LSA Drum Pallets

A. Using procedure 6.9.174 walk through with the student the preparation of one LSA drum pallet demonstrating procedural requirements, good Health Physics practices and recordkeeping.

Date

Examiner

B. Observe the student preparing LSA drum pallets using procedure 6.9.174. Repeat this step until the student has prepared one LSA drum pallet without prompts or corrections by the examiner.

Date

Examiner

LSA Van Loading

Discuss, then demonstrate to the student the proper method of loading the LSA Van.

The student should load one LSA Van with empty drums and boxes while being observed.

Date

Examiner

Complete section 13.C NPA Qual. guide
Forward completed Training guide to
Tech. Trng. Supervisor NTD.

Examiner

Reviewed by _____

Technical Training Supervisor

cc individual folder - Station Services Group
original - Individuals Training folder

Solid Waste Compacting Training Guide

Students Name _____ Date Started _____

Theory of Operation

Discuss with the NPA the theory of operation of the drum compacter. Point out all associated controls, gauges, and safety features.

Date _____ Examiner _____

Radiation Safety

Ensure the NFA is familiar with the Health Physics requirements of drum compacting.

Date _____ Examiner _____

Compacter Operation

A. Using procedure 6.9.176 walk through one complete cycle of drum compacting (from empty drum to full capped labeled and sealed) while using the associated forms and discussing each step with the student. Include pre and post compacting drum inspections.

Date _____ Examiner _____

B. While being observed have the student compact drums using procedure 6.9.174. Repeat this step until the student completes one complete cycle with no prompts or corrections by the examiner.

Date _____ Examiner _____

Complete section 13.d of the NPA Qual. card.

Forward this sheet to the Technical Training Group Leader, Nuclear Training Department

Reviewed by _____
Technical Training Group Leader

c.c. Station services Group (Individual file) original individuals training file.

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4.0 SPECIAL TRAINING

Objective

Special Training addresses that training that does not fall under either General Employee Training or Group Training.

Program Description

Special Training addresses nine areas:

1. On-Site Radiation Emergency Organization Training
2. Fire Brigade Training
3. Off-Site Agencies
4. First Aid Training
5. Respirator Training
6. Special Training Retraining
7. Management and Supervisory Development Program
8. BECo Recovery Organization Emergency Plan Training
9. Contractor Indoctrination and Training

Program Participation

Personnel designated by their Group Leader and contractor personnel will participate in Special Training Programs.

Program Responsibility

The individual's Group Leader has the overall responsibility for assuring that all special training is completed.

Program Documentation

Special Training documentation is maintained as specified in the respective section of this manual.

Examiners

For all special training, an examiner for that training may be certified by the Training Department. Prior to certification, said examiner, will be provided training in how to establish and administer criterion tests (exams). The examiners will be documented by use on Form S-10.

4.1 ON-SITE EMERGENCY ORGANIZATION TRAINING

Objective

The objective of On-Site Radiation Emergency Organization Training is to develop and maintain the proficiency of members of the on-site Radiation Emergency Organization. Specifically, on-site Radiation Emergency Team Training will:

- a. Familiarize personnel with the contents and manner of implementation of the emergency plans and procedures;
- b. Teach personnel with respect to the performance of the specific duties assigned to them in the emergency plans;
- c. Keep personnel informed of any changes in the emergency plans and procedures;
- d. Maintain a high degree of preparedness at all levels involved.

Program Requirements

Training Requirements Satisfied

1. a. FSAR, Appendix N.1.0
b. 10CFR50, Appendix E, IV-H
2. a. 10CFR50, Appendix E, IV-I
3. a. Volume V, 5.1.3.2

Requirement Summary

Requirement for on-site emergency organization training

Requirements for periodic radiation emergency drills

Description of specific drills

4.1.1 RADIATION EMERGENCY ORGANIZATION TRAINING

4.1.1.1 Program Description

Organization of the Radiation Emergency Plan includes the Emergency Director, five Radiation Emergency Teams, Security and several key personnel used in conjunction with activation of the Emergency Control Center. Training for each individual is conducted utilizing Training Forms (Form S-1 thru S-4)

Individuals acting in positions assigned to Radiation Emergency Teams are required to complete their respective forms prior to being assigned and annually thereafter. This generally involves a review of applicable emergency procedures plus demonstration of the ability to perform specific duties assigned to the particular team. The qualifying individual is responsible for documenting with his/her signature that he/she has read and is familiar with the emergency procedures applicable to the emergency team. Completion of the form requirements will be documented by the individual designated on the form. The Chief Radiological Engineer will certify the qualifications of individual Emergency Team Members. The Training Group will maintain all documentation

4.1.1.1.1 Emergency Director

The Station Manager and all persons designated in the emergency plan as alternates are required to complete qualification as Emergency Director.

Qualification is accomplished by completing Form S-1, Emergency Director Training. After the qualifying individual has completed the form, qualification will be certified by the Senior Nuclear Training Specialist. Form S-1 will be retained by the Training Group.

4.1.1.1.2 Radiation Emergency Team

Station personnel assigned to the Radiation Emergency Teams are required to complete qualifications as outlined on Form S-2, Radiation Emergency Team Training. After the completion of all form requirements is certified by the Chief Radiological Engineer, Form S-2 will be retained by the Training Group.

4.1.1.1.3 Emergency Center Training

Personnel assigned responsibilities in conjunction with the activation of the Emergency Centers are required to complete the qualifications for their respective duties outlined on Emergency Center Training Form S-3. After the qualifying individual has completed the Emergency Center Training Form, qualification will be certified by the Chief Radiological Engineer. Form S-3 will be retained by the Training Group.

4.1.1.1.4 Security Team

The Emergency Security Coordinator and Security Guards are required to complete qualification as the members of the Security Team.

Qualification is accomplished by completing Form S-4, Security Team Training. After the form has been completed, qualification will be certified by the Security Supervisor. Form S-4 will be retained by the Training Group.

4.1.1.2 Program Responsibilities

Responsibilities for initial on-site Radiation Emergency Organization training are as follows:

4.1.1.2.1 Senior Nuclear Training Specialist

The Senior Nuclear Training Specialist is responsible for:

1. Distributing Special Training Forms to the respective instructor after the individual's assignment to special training is made.
2. Maintain Special Training Records.

4.1.1.2.2 Chief Radiological Engineer

The Chief Radiological Engineer is responsible for:

1. Ensuring the respective training is conducted.
2. Certifying the completion of qualifications.

4.1.1.2.3 Security Supervisor

The Security Supervisor is responsible for:

1. Ensuring the respective training is conducted.
2. Certifying the completion of qualifications.

4.2 FIRE BRIGADE TEAM

All members of the PNPS Fire Brigade Team are required to complete initial qualification as members of the Fire Brigade Team prior to being assigned to the brigade, and quarterly training thereafter. Initial qualification is documented by completing Form S-5, Initial Fire Brigade Team Training. Requalification will be documented by completing Form S-6, Fire Brigade Requalification Training. Brigade Training will be approved for technical adequacy by the Fire Protection and Prevention Officer and for instructional adequacy by the Nuclear Training Manager. The administration of drills will be done as per procedure 1.4.23. Form S-5 and S-6 will be retained by the Training Group.

4.2.1 FIRE BRIGADE TRAINING

4.2.1.1 Program Description

Fire Brigade Training is a comprehensive fire fighting program consisting of classroom as well as field fire fighting instruction. The fire fighting program recognizes the need for nuclear generating plants to be self-sufficient with respect to fire fighting activities and therefore incorporates periodic refresher and retraining courses as well as advanced training for all brigade leaders. (Except for the FPPO(s) because mandated job qualifications are in excess of the required training (see section C). Instruction is provided under the supervision of the Nuclear Training Manager. The Fire Protection and Prevention Officer evaluates that Brigade personnel are qualified by administering periodic drills as per procedure 1.4.23. The training is administered by a qualified instructor(s) who is knowledgeable and suitably trained in fire fighting techniques.

Learning packages and instructor qualifications shall be approved for technical adequacy by the F.P.P.O. and for instructional adequacy by the Nuclear Training Manager.

The Fire Training Program is divided into three segments:

- A. Initial Training
- B. Requalification Training
- C. Advanced Training for Brigade Leaders

A. INITIAL FIRE BRIGADE TRAINING

The Initial Fire Brigade Training (Form S-5) must be completed prior to being assigned to the PNPS Fire Brigade. Plant orientation and evacuation routes will be covered in G.E.T. This involves training in the following subjects:

1. Automatic sprinklers and detection systems and related procedures.
2. Portable fire extinguishers, fixed suppression systems (CO₂, Dry Chemical, Halon) and related procedures.
3. Self-contained breathing apparatus (SCBAs and control room reservoir) and recharging compressor system.
4. Fire water supply system, associated pumps (fixed and mobile) and fire ground hydraulics.
5. Hose handling, hose lays and advancing (Hose reels, hydrant house, mobile apparatus).
- *6. Interior fire attack, multiple levels, lower levels, quadrant fires, basic ventilation, search and rescue, ladders and ropes.
- *7. Flammable and combustible liquids (water fog and foam) and electrical fires.

- *8. Flammable gasses - hydrogen, LP/LNG, Acetylene, broken flange and BLEVE control.
 9. Fire plan, fire prevention, emergency procedures and plant hazardous materials.
 10. Plant ventilation systems, smoke control, fire spread and plant communication.
 11. Basic tactics and strategy review.
- (* - To be completed annually)

B. FIRE BRIGADE REQUALIFICATION TRAINING

Requalification training is required quarterly for all previously qualified Fire Brigade Members except the FPPO(s). This training includes classroom and/or field training covering the 11 subjects outlined in section A above. These subjects must all be covered within a two year period. Form S-6, (Fire Brigade Requalification Training) must be completed prior to being requalified as a brigade member.

C. ADVANCED TRAINING FOR BRIGADE CHIEFS

Advanced Fire Brigade Training consists of an Advanced Tactics and Strategy Program that is essential for all brigade chiefs. Brigade Chiefs first must qualify as a Brigade Member and then complete the tactics and strategy course, prior to assuming a leadership role in the PNPS Fire Brigade. Completion of this training is documented on Forms S-5 and S-6. The Fire Protection and Prevention Officer and his assistant must attend advanced training seminars and teach or attend live fire training sessions, at least once a year in accordance with the requirements of the PNPS Fire Protection Plan, to remain qualified to perform his/her duties.

4.2.A

FIRE WATCH TRAINING

Fire Watch Training is conducted to provide the station with an adequate number of individuals qualified to monitor "Hotwork" (work involving ignition sources).

4.2.A.1

Program Description

Training will consist of classroom and actual "live-burn" training. Course content is to include firefighting techniques and plant emergency procedures.

Qualification is maintained through annual retraining.

4.3 OFF-SITE AGENCIES

4.3.1 Program Description

Off-site agencies may be requested by the station to provide assistance during emergency situations. The agencies which presently have pre-established agreements in the event assistance is required are:

1. Plymouth Fire Department
2. Jordan Hospital
3. Plymouth Police Department
4. Massachusetts Department of Public Health
5. Massachusetts State Police
6. United States Coast Guard

Annually, these agencies shall be invited by the individual scheduling the training exercise. The invitation may be to participate in or observe training for the purpose of reviewing their responsibilities and procedures to be followed in the event their assistance is requested. Completion of this training will be documented on Form S-7, Off-Site Agency Training, and sent to the Training Department for retention.

4.4 FIRST AID TRAINING

4.4.1 Program Description

First Aid Training is required for Health Physics/ALARA Technicians, Nuclear Plant Operators, Nuclear Auxiliary Operators, Nuclear Operating Supervisors, and Nuclear Watch Engineers, in order to ensure that qualified first aid personnel are available on-site at all times. Other categories of station personnel will also be encouraged to participate.

First Aid Training is conducted by participation in a Multi-Media First Aid or similar course conducted on the Pilgrim site. The Multi-Media First Aid Course includes instruction in the following:

- Unit 1: Indoctrination to course; wounds, shock, artificial respiration
- Unit 2: Poisoning, burns, ill effects of heat and cold, bandaging, head injury, internal injury, gunshot wounds
- Unit 3: Infection, tetanus, animal bites, immobilization, heart attack, apoplexy, simple fainting, epilepsy
- Unit 4: Foreign objects in the eye, air passages, food passages, rescue and transfer, review, final test

Note: A similar course, covering the general guidelines listed may be used.

Participation in the course, which is conducted by qualified instructors in first aid will qualify the student for a period of three years. Course completion is documented on Form S-8, PNPS First Aid Training. A list of those individuals qualified in first aid will be submitted to the Methods, Compliance and Training Group Leader, for updating of station procedure 5.6.

4.4.1.1 First Aid Training

Plant personnel required to complete qualification in first aid training will be certified on Form S-8, First Aid Training Form. This form may be fulfilled by attendance in a Multi-Media First Aid or similar course.

After the qualifying individual has completed the First Aid Training, qualification will be certified by the First Aid Instructor on Form S-8 and it will then be returned to the Training Group for retention.

RESPIRATORY TRAININGObjective

The objective of respiratory training is to provide a formalized training program covering the requirements that personnel shall fulfill prior to using respirators for protection against airborne radioactive material.

Program Requirements and Documentation

The required training will be done in accordance with NUREG-0041 and Reg. Guide 8.15.

4.6.1

Program Description

Special training re-qualification is conducted at the frequencies specified in the sections. This periodic performance has the following objectives:

1. To verify equipment functions as planned.
2. To demonstrate the adequacy of emergency procedures.
3. To check the skills and proficiency of personnel involved.

The retraining will be accomplished by completion of the respective training forms and participation in periodic training exercises/drills.

The following training exercises/drills are conducted at least annually:

1. Plant Radiation Emergency Training Exercise/Drill
2. Emergency Health Physics and Medical Training Exercise/Drill
3. Fire Brigade Training Exercise/Drill
4. First Aid Training Exercise/Drill
5. Abnormal and Emergency Procedure Training Exercise/Drill

All training exercises/drills are critiqued at their conclusion by the Training Exercise Coordinator. The refresher training conducted during these exercises and critiques will reinforce the information supplied in initial training. Participation in training exercises will be documented on Form S-9, Special Training Exercise/Drill.

4.6.2 Program Responsibilities

The responsibilities for special retraining are as follows:

4.6.2.1 Senior Nuclear Training Specialist

The Senior Nuclear Training Specialist is responsible for maintaining documentation associated with these training exercises and keeping personnel aware of changes in site emergency plans and procedures by use of the Document Acknowledgement Program, on-shift training, or formal training.

Emergency Preparedness Coordinator

The Emergency Preparedness Coordinator is responsible for scheduling on-site training exercises and assigning the coordinator for the following:

1. Plant Radiation Emergency Drill
2. Emergency Health Physics and Medical Training Drills
3. First Aid Training Exercise/Drill

Fire Protection and Prevention Officer

The Fire Protection and Prevention Officer is responsible for scheduling Fire Brigade Training Exercises/Drills and assigning the coordinator.

4.6.2.2 Training Exercise Coordinator

The Training Exercise Coordinator is responsible for:

1. Overseeing the performance of training exercises/drills and taking appropriate action if unsatisfactory performance is noted.
2. Critiquing personnel performance at the conclusion of each training exercise/drill, including accelerated training for individuals who have demonstrated unsatisfactory performance during the exercise.
3. Document on Form S-9.

4.7

MANAGEMENT AND SUPERVISORY DEVELOPMENT PROGRAM

4.7.1

Program Description

It is the purpose of BECo Nuclear Organization to provide personnel in supervisory and management positions with training in the principles of management, BECo administrative procedures, and problem analysis and decision making techniques. Personnel temporarily promoted to exempt or supervisory positions are exempt from this program.

This program is divided into two phases, i.e. Phase I is the exempt employees' orientation program which is intended as an initial orientation for newly appointed exempt employees and supervisors to various "administrative" practices for which they will have some responsibility. Initial training on supervisory principles and other supervisory responsibilities are included for supervisors. The content of this phase is outlined on Form S-12. The program is delivered using a combination of monitored self study, formal courses and examiner review of the various program elements. Phase II is intended to address the ongoing training needs of supervisors and managers who have already satisfied the requirements of Phase I (through either completion of the orientation program or on the job experience). Form S-13 contains a listing of various supervisory and management skill areas which are necessary for performance of various supervisory and management responsibilities. This form is to be used as a tool to assess the supervisory and management skills training needs of nuclear supervisors and managers. This assessment

is to be completed in conjunction with the annual corporate developmental review process. Instructions for completing the form are found on the first page of the form.

In addition, specialized training will be provided to members of the following management committees, i.e. Operations Review Committee (ORC) and Nuclear Safety Review Audit Committee (NSRAC). The training programs include member responsibilities, requirements, and procedures which are to be followed in performing member duties.

4.7.2 Responsibilities

4.7.2.1 Immediate Supervisor of Supervisors

Ensure the Supervisory Training Assessment Form is completed for each supervisor as a result of, or, during annual development review and forward to the applicable Group Leader/Chief Engineer for review and concurrence.

4.7.2.2 Department Liason (For Departments Other Than NOD)

Collect forms from Group Leaders and summarize for Department Manager. Forward completed forms to NTD along with a memo from Department Manager stating his judgement of overall department supervisory training priorities. Coordinate departmental participation in training programs.

4.7.2.3 Department Manager

Review results of assessment and prioritize department training needs.

4.7.2.4 Staff Development Group Leader

Collect and organize department forms. Forward to NTM analysis of assessment forms and recommendations for a supervisory training program and schedule. Develop and/or acquire training programs. Coordinate program delivery and documentation. Receives notices of appointment of new supervisory personnel and ensures same are scheduled to participate in both Phase I and II.

4.7.2.5 Group Leader/Chief Engineer

Review all Supervisory Assessment Forms completed within the group and determine overall supervisory training priorities for the Group in conjunction with applicable Department Manager. These priorities and individual assessment forms are transmitted via memo to the Nuclear Training Manager prior to March 31 of each year. Ensures supervisory personnel are in attendance at training programs scheduled for them.

4.7.2.6 Nuclear Training Manager (NTM)

Reviews recommended training programs and plan with Training Advisory Council. Uses input from Training Advisory Council in preparing Training Department plan and budget for the year.

4.7.2.7 ORC Chairman

The ORC Chairman is responsible to review and approve training materials for ORC Membership Training.

4.7.2.8 NSRAC CHAIRMAN

The NSRAC Chairman is responsible to review and approve training materials for NSRAC Membership Training.

4.7.2.9 Training Advisory Council

Reviews results of Departmental Assessments. Assists NTM in setting program priorities and establishing adequate budget.

4.7.2.10 Human Resource Specialist Nuclear

Notifies the Nuclear Training Manager, in writing, of the names, titles, group, and effective dates of personnel newly appointed to exempt and supervisory positions within the Nuclear Organization. Such notifications are made within five working days of final approval date of each appointment.

4.7.2.11 Technical Training Group Leader

Coordinates and or conducts applicable training for ORC and NSRAC members.

4.7.2.12 Comprehensive Training Group Leader

Receives notification of appointment of new exempt and supervisory personnel. Ensures they are scheduled to participate in the Phase I Orientation Program. Coordinates the development and conduct of the various sessions contained in the Phase I Orientation Program. Ensures participation in the program is properly documented.

4.7.3

Program Frequency

Elements of the program will be routinely conducted on an "as-needed" basis. Personnel newly appointed to exempt and supervisory positions will enter the Orientation Program within four weeks of appointment. Typically the first elements completed will be those utilizing the monitored self study method. Elements which are conducted as formal classes or workshops will be scheduled periodically to best take advantage of grouping several new supervisors together in one class, while not causing these personnel to wait an unreasonable amount of time to complete the orientation program. In no case will a supervisor be permitted longer than six months after appointment to complete the Supervisors Orientation Program.

Program Description

Initially, the Emergency Organization includes the Emergency Director, five Radiation Emergency Teams, Security, TSC Supervisor and staff, OSC supervisor and staff and several key personnel used in conjunction with activation of the Emergency Response Facilities. The BECO Recovery Organization plays a key role in the overall Emergency Plan. Training for each individual in the Recovery Organization is conducted utilizing Training Form S-11.

Individuals acting in positions assigned to the BECO Recovery Organization are required to complete their respective forms prior to being assigned and annually thereafter. This generally involves a review of applicable emergency procedures plus demonstration of the ability to perform specific duties assigned. The qualifying individual is responsible for documenting with his/her signature that he/she has read and is familiar with the emergency procedures applicable to the Recovery Team. Completion of requirements listed on the form will be documented by the individual designated on the form. The Emergency Preparedness Co-ordinator will certify the qualifications of individuals. The Training Group will maintain all documentation.

4.9

CONTRACTOR TRAINING

4.9.1

Objective

The objective of contractor training and indoctrination is to provide assurance that:

1. Contractor personnel who perform activities which come under the BECo Quality Assurance Program are indoctrinated to applicable BECo policies and procedures.
2. These personnel receive notification of changes to the policies and procedures that affect their work.

4.9.2

Training Requirement Satisfied

BEQAM - Section 16

4.9.3

Program Description

After completing G.E.T. or upon arrival at the work location, contract personnel will undergo an orientation and indoctrination which is tailored to the specifics of the assignment for which they were hired.

The content of this process will be based upon the format used in the Department for BECo personnel orientation, and may include additional policies and procedures which may be appropriate.

4.9.4 Responsibilities

4.9.4.1 Group Leader

1. Review contractors scope of responsibilities.
2. Using Departmental Indoctrination Sheet determine the policies and procedures which are appropriate for the contractor.
3. Verify completion of the indoctrination.
4. Give to Department Liason.

4.9.4.2 Department Liason

1. Maintain list of contract personnel working in the Department.
2. Assure completion of contractor indoctrination.
3. Forward completed copy of the indoctrination sheet to the Nuclear Training Department

4.9.4.3 Contractor

1. Review identified policies and procedures providing requested verification of completion.

4.9.4.4 Staff Development Group - NTD

1. Set up contractor indoctrination files.
2. Enter indoctrination information into training records management system.
3. Forward document to RMG for entry in corporate records management system.

PNPS EMERGENCY DIRECTOR TRAINING

NAME _____ TITLE: (check One)

_____ Station Manager

_____ Chief Operating Engineer or
Day Watch Engineer

_____ Watch Engineer

_____ Operating Supervisor

- 1. Read and be familiar with the content of the Emergency Plan Implementing Procedures.

_____ Date

_____ Signature, Examiner

- 2. Be responsible for final assessments of emergency situations.

_____ Date

_____ Signature, Examiner

- 3. Demonstrate the ability to implement Procedure 5.7.2.1.

- 4. Demonstrate knowledge in the performance of:

- a. Classify an emergency situation in accordance with the established emergency action levels (EAL's).
- b. Provide liaison and communications with the local, state and federal agencies, and to insure that notifications and reports to those agencies are made in a timely manner.
- c. Request assistance from onsite and offsite personnel, organizations and agencies.
- d. Review and evaluate updated information and data.
- e. Determine the necessity for onsite evacuation.
- f. Determine the advisability for re-entry if warranted.
- g. Determine the necessity for on-site evacuation.

- h. Determine whether an emergency should be reclassified to an escalated EAL or to a lower level EAL due to improved plant conditions.
- i. Recommend protective action for the public to the Massachusetts Department of Public Health (MDPH).

Date

Signature, Examiner

5. Training Evaluation (Check One)

Written Quiz _____

Oral Examination _____

Grade (If Written Quiz) _____

Date

Signature, Examiner

6. Qualification as Emergency Team Director Certified Complete

Date

Signature, Examiner

Date

Signature, Emergency Preparedness Coordinator

Date

Signature, Senior Nuclear Training Specialist

PNPS EMERGENCY TEAM MEMBER CERTIFICATION

NAME _____ GROUP _____

1. Read and be familiar with the contents of the Emergency Plan Implementing Procedures.

_____ Date _____ Signature, Examiner

2. Demonstrate the ability to perform satisfactorily the requirements of (Check one)

a. Monitoring Team Leader _____

b. Monitoring Team Member _____

_____ Date _____ Signature, Examiner

3. Demonstrate the ability to obtain radiation monitor readings, environmental air samples and forward results to E.O.F.

_____ Date _____ Signature, Examiner

4. Training Evaluation (Check One) Written Quiz _____

Oral Examination _____

Date Passed _____ Grade (If Written Quiz) _____

_____ Date _____ Signature, Chief Radiological Engineer

_____ Date _____ Signature, Senior Nuclear Training Specialist

Return completed form to the Training Department

PNPS EMERGENCY CENTER TRAINING

Name: _____ Group: _____

Check the Applicable Center Assignment:

- _____ Emergency Control Center
- _____ Technical Support Center
- _____ Operational Support Center
- _____ Alternate Emergency Control Center

1. Read and be familiar with the contents of Emergency Plan Implementing Procedures.

_____ Date _____ Signature, Examiner _____

2. Demonstrate the ability to satisfactorily perform the requirements of the responsibilities assigned.

_____ Date _____ Signature, Examiner _____

3. Training Evaluation (Check One) Written Quiz _____
 Oral Examination _____
 Date Passed _____ Grade (If Written Quiz) _____

_____ Date _____ Signature, Examiner _____

4. Qualification as _____ Certified Complete.

_____ Date _____ Signature, Chief Radiological Engineer _____

_____ Date _____ Signature, Sr. Nuclear Training Specialist _____

Return completed form to the Training Department.

PNPS SECURITY TEAM TRAINING

Name: _____

TITLE: (Check One)

- _____ Emergency Security Coordinator
- _____ Security Guard

1. Read and be familiar with the contents of the following procedures: Emergency Plan Implementing Procedures.

_____ Date

_____ Signature, Examiner

2. Demonstrate familiarity with the Personnel Accountability Procedure.

_____ Date

_____ Signature, Examiner

3. Demonstrate familiarity with Access/Egress Control during Radiation Emergency.

_____ Date

_____ Signature, Examiner

4. Training Evaluation (Check One)
 - Written Quiz _____
 - Oral Examination _____
- Date Passed _____ Grade (If Written Quiz) _____

_____ Date

_____ Signature, Examiner

5. Qualification as a member of the Security Team Certified Complete.

_____ Date

_____ Signature, Chief Radiological Engineer

_____ Date

_____ Signature, Sr. Nuclear Training Specialist

I. INITIAL PNPS FIRE BRIGADE TRAINING

Name _____ Job Title: _____

Date _____ S.S. # _____

The above-named person has completed the initial PNPS Fire Brigade Training Program, as per the PNPS Training Manual, Section 4.2, and is now certified as a qualified Brigade member.

Date Completed: _____ Instructor: _____

Training Completed _____
Senior Nuclear Training Specialist _____ Date _____

Certification _____
Nuclear Training Manager _____ Date _____

I. BRIGADE CHIEFS CERTIFICATION

Received training in typical application of advanced tactics and strategy of fire fighting, as per PNPS Training Manual, Section 4.2.C.

Training Evaluation (Check one) Written Quiz _____

Oral Examination _____

Grade (if written quiz) _____

_____ Date Training Completed _____ Signature, Instructor

Certified as a Fire Brigade Chief.

_____ Date _____ Signature, Senior Nuclear Training Specialist

_____ Date _____ Signature, Nuclear Training Manager

(Return completed Form to the Training Department)

REQUALIFICATION PNPS FIRE BRIGADE TRAINING

Name: _____ S.S.# _____

Title: _____

I. YEAR ONE

A. Fire Brigade Requalification Training completed for the following quarters:

1. Quarter ending _____
Date

Subjects *(numbers 1-14) _____

Instructor: _____ Date: _____

2. Quarter ending _____
Date

Subjects *(numbers 1-14) _____

Instructor: _____ Date: _____

3. Quarter ending _____
Date

Subjects *(numbers 1-14) _____

Instructor: _____ Date: _____

4. Quarter ending _____
Date

Subjects *(numbers 1-14) _____

Instructor: _____ Date: _____

REQUALIFICATION PNPS FIRE BRIGADE TRAINING

II. YEAR TWO

A. Fire Brigade Requalification Training completed for the following quarters:

1. Quarter ending _____
Date

Subjects *(numbers 1-14) _____

Instructor: _____ Date: _____

2. Quarter ending _____
Date

Subjects *(numbers 1-14) _____

Instructor: _____ Date: _____

3. Quarter ending _____
Date

Subjects *(numbers 1-14) _____

Instructor: _____ Date: _____

4. Quarter ending _____
Date

Subjects *(numbers 1-14) _____

Instructor: _____ Date: _____

*Enter subject number from list of Fire Requalification Subjects, Section A.

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PNPS OFF-SITE AGENCY TRAINING

Agency: _____ Date Invited _____

Date Participated/Observed: _____

Training Attendance Form G-2 Attached.

Review Responsibilities and Associated Procedures (List Procedures)

Date

Signature, Training Exercise Coordinator

Date

Signature, Sr. Nuclear Training Specialist

Return Completed Form to
the Training Department.

PNPS FIRST AID TRAINING

Name: _____ Group: _____

1. Read and be familiar with the contents of the Personal Injury Procedure (1.4.18 and 5.6).

Date Signature, Examiner

2. Training Evaluation (Check One) Written Quiz _____
Oral Examination _____
Date Passed _____ Grade (If Written Quiz) _____

Date Signature, Examiner

3. Qualification in First Aid Certified Complete.

Date Signature, Sr. Nuclear Training Specialist

Return Completed Form to
the Training Department.

PNPS SPECIAL TRAINING EXERCISE/DRILL

I. Exercise/Drill Conducted: _____

Date: _____ Coordinator: _____

Title: _____

Observer(s)

NAME	TITLE	RESPONSIBILITIES
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Personnel Participated

NAME	FUNCTION ASSIGNED
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

II. Description of Simulated Incident: _____

PNPS CERTIFICATION OF EXAMINERS FOR SPECIAL TRAINING

I. The following individuals have technical expertise in the below listed training area, are skilled in examination methods, and are therefore certified as examiners for: _____ training.

	NAME	DATE
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____

The above listed examiners are authorized to certify proficiency on Form _____.

Date

Signature, Sr. Nuclear Training Specialist

Date

Signature, Nuclear Training Manager

NOTE: Attach Documentation of Proficiency to this Form.

BECO RECOVERY ORGANIZATION

NAME: _____

GROUP: _____

- 1. Read and be familiar with the contents of the BECO Recovery Organization Implementing Procedures.

Date

Signature, Examiner

- 2. Demonstrate the ability to satisfactorily perform the requirements of the responsibilities assigned.

Date

Signature, Examiner

- 3. Training Evaluation (Check one)

Written Quiz _____

Oral Examination _____

Drill _____

- 4. Qualification as _____
Certified Complete

Date

Signature, Emergency Preparedness
Coordinator

Date

Signature, Technical Training
Coordinator

Return completed form to the Training Department

NUCLEAR EXEMPT EMPLOYEES ORIENTATION PROGRAM
(INCLUDES SUPERVISORS)

NAME _____ JOB TITLE _____

Supervises other employees Yes No; If yes, number of subordinates _____;
Number of years as manager and/or supervisor _____.

Check here if this person supervises union personnel.

I. NEW EXEMPT EMPLOYEE ORIENTATION

- °Benefits and Exempt Program
- °BECo Affirmative Action Policy
- °Corporate Orientation

Instructor Signature Date

II. GENERAL EMPLOYEE TRAINING (GET)

- °Plant Organization and Administration
- °Plant Description/Basic BWR Operation
- °Industrial Safety (including tagging procedures)
- °Nuclear Plant Security
- °Quality Assurance/Quality Control
- °Radiation Protection (including introduction to PNPS Emergency Plan)

Instructor Signature Date

III. NUCLEAR ORGANIZATION

- °Structure, charters, interfacing of other groups and organizations
- °Who is who in management
- °Current department objectives and priorities

Examiner Review

Date

IV. ADMINISTRATION

- °Introduction to and organization of organizational policies and procedures, i.e. Bulletin Book, Nuclear Policy, NOP's, Training Manual, Personnel Administration Guidelines, BEQAM, FSAR, Technical Specifications, and Department procedures.
- °The procedure change process and how to "staff" procedures and procedure changes
- °Introduction to Long Term Program
- °How to utilize the Document Control and Retrieval System

Examiner Review

Date

V. NUCLEAR UTILITY REGULATORS

- °Role and general organization of NRC
- °Role and general organization of ANI
- °BECo relationship with and commitment to INPO
- °BECo role and relationship with DPU

Examiner Review

Date

VI. QUALITY ASSURANCE AND CORRECTIVE ACTION PROGRAMS

- °Introduction to and use of the BEQAM
- °How deficiencies are identified and reported by QAD, NRC, ANI and INPO
- °How corrective action plans are developed and tracked in response to findings by QAD, NRC, ANI and INPO
- °The supervisor's responsibility for corrective action

Examiner Review

Date

VII. COST AND WORK CONTROL

- °Introduction to services provided by the Planning, Scheduling and Cost Control Department (PS&CC)
- °Introduction to and use of WISPCS and ESR's
- °Use and monitoring of time sheets, overtime, work order and account numbers
- °Petty cash policies and procedures, including use of Green Hornets etc.
- °Brief overview of the Annual Planning and Control Budget Process

Examiner Review

Date

VIII. PROCUREMENT

- °How to initiate and track: Purchase Orders, Withdrawal Requisitions, Production Orders and Stock Material Authorizations
- °How to prepare bid specifications
- °Procedure for sole source procurements
- °How to acquire material from the Warehouse
- °Introduction to and use of Q List

Examiner Review

Date

IX. SAFETY

- °Orientation to and use of BECo Safety Manual
- °Overview of PNPS Fire Protection Plan
- °PNPS Housekeeping Policy
- °Conduct of Operations NOP

Examiner Review

Date

X. SUPERVISORS ONLY (If individual is not a supervisor write N/A in each blank below)

The following elements are required ONLY for those individuals who supervise the work of others.

1. Labor Relations (Required only for supervisors who supervise union personnel)

- °Orientation to contract terms and administration there of
- °Taking effective disciplinary action, including handling excessive absenteeism

Examiner Review

Date

2. Introduction to BECo Drug and Alcohol Abuse Program

Examiner Review

Date

3. OSHA Industrial Safety Program, including degraded fire barriers (required only for on-site PNPS supervisors)

Examiner Review

Date

- 4. ALARA for First Level Supervisors (required only for on-site PNPS supervisors who are responsible for ALARA reviews)

Examiner Review

Date

- 5. Introduction to Supervision (required of all personnel who supervise the work of others). This supervisory training program is made of the following modules:

- °Role of the Supervisor
- °Problem Solving
- °Defining performance expectations
- °Communicating work assignments
- °Giving performance feedback
- °Discussing performance problems

Instructor Signature

Date

XI. ORIENTATION PROGRAM COMPLETE

This is to certify that _____ has demonstrated an overall working knowledge of the various items contained in this program and is, therefore, adequately informed to perform the various administrative duties addressed by this document.

Comprehensive Training Group Leader

Date

SUPERVISOR AND MANAGEMENT
SKILLS ASSESSMENT CHECKLIST

Boston Edison Company

Chiltonville Training Center

TO THE SUPERVISOR/MANAGER

Managing a complex, growing organization like the Pilgrim Nuclear Power Station, and making it as successful as we have, mandates professionals who are capable and dedicated to the constant improvement of their skills. Your association with Boston Edison personifies these qualities and exemplifies the spirit of willingness of both personal development and career growth. In this spirit, the Chiltonville Training Center is preparing to offer you added training courses which will respond to your needs and recognize your professionalism.

The list which follows on the next pages represents a broad range of management skills identified by most practitioners as necessary for the effective and efficient management of any organization. Some skill areas were selected based on INPO and QA audits, and others were the result of an informal survey of several managers and trainers. Your input into this checklist will give you an opportunity to make your specific needs known.

Please take time to review these areas and indicate those in which you feel you need to receive training. Review these selections with your immediate supervisor and in conjunction with him or her assign a priority to each. In conjunction with your supervisor identify, using a 1, 2, or 3, the relative priority of each selection. (1 = most important; 2 = moderately important; 3 = least important). Notice that we have made provisions on the list, under the category labeled "other", for you to add any additional skills you feel should be included. Your immediate supervisor is responsible to forward the completed form to your Group Leader/Chief Engineer.

On the basis of the frequency of responses and relative priority of each area, as identified by your rating process, the Chiltonville Training Center will develop courses. Routinely, on a periodic basis, these courses will be offered to all supervisors and managers. Simultaneously with developmental review each year, we will re-issue the needs checklist to ensure that you have the opportunity to update your priorities.

Thank you for your input.

SUPERVISOR/MANAGER CHECK-LIST

Name _____ Position _____

Date _____ Department _____

- INSTRUCTIONS:
- Complete the checklist by checking (✓), as indicated, on the line next to the area(s) you feel a personal need to learn. Add additional areas of interest in the column labeled "other" at the end of the list.
 - Review your selections with your immediate supervisor and prioritize each selection using a 1, 2, or 3 (1 = most important, 2 = moderately important, 3 = least important).
 - Both you and your immediate supervisor sign on the appropriate areas indicated at the bottom of the checklist and fill in the review date.
 - Return the checklist to Group Leader/Chief Engineer on or before March 15.

CHECK (✓)/PRIORITY (1,2,3)

- | | | |
|-----|-----|---|
| ___ | ___ | Role of Supervision |
| ___ | ___ | Problem Solving (Analyzing, Investigating, Deciding) |
| ___ | ___ | Defining Performance Expectations |
| ___ | ___ | Communicating Work Assignments |
| ___ | ___ | Giving Performance Feedback |
| ___ | ___ | Discussing a Performance Problem |
| ___ | ___ | Time Management |
| | | |
| ___ | ___ | Delegation |
| ___ | ___ | Budgeting and Cost Controls |
| ___ | ___ | Conducting Meetings |
| ___ | ___ | Effective Listening (Improving Two-Way Communication) |
| ___ | ___ | Planning, Organizing and Directing Performance |
| ___ | ___ | Developmental Reviews |
| ___ | ___ | Performance Appraisal System |
| ___ | ___ | Interpersonal Management Skills |
| ___ | ___ | Focused Selection Interviewing |
| ___ | ___ | How to Identify Behavior Related to Stress and Burn-out |

CHECK (✓)/PRIORITY (1,2,3)

- Stress Management
- Team Building
- Memo and Report Writing (Management Writing)
- Organizational Behavior and Development
- Manpower Planning - Determining Staffing Needs and Forecasting
- Planning, Administrating and Controlling Resources
- Financial Management
- Cost Monitoring
- Cost-Benefit Analysis
- Developing, Implementing and Monitoring Administrative Systems
- Intermediate-Range Program Planning and Development
- Other (specify): _____
- _____
- _____

REVIEWED AND DEVELOPED JOINTLY BY:

Your Signature

Date

Immediate Supervisor's Signature

Date

5.0 Vendor Services

5.1 Withdrawal Requisitions/PO's for Training Materials.

All Training Materials will be purchased in accordance with PNPS Procedure 3.MI-5, Procurement of Items and Services. The Senior Nuclear Training Specialist or his/her delegate will sign the required documentation as per PNPS Procedure 3.MI-5, Procurement of Items and Services.

5.2 Training Budget

The Senior Nuclear Training Specialist will establish control of the Training Department Budget under the direction of the Methods, Compliance and Training Group Leader.

The Senior Nuclear Training Specialist will annually review the budget with the Methods, Compliance and Training Group Leader for planning of the Station Training needed.

5.3 Travel for Offsite Training

All Station personnel traveling offsite for training will contact the Senior Nuclear Training Specialist.

The Senior Nuclear Training Specialist will complete Form OST-1. Form OST-1 will be used by the Senior Nuclear Training Specialist to plan and document the offsite training.

Upon the completion of offsite training the information from Form OST-1 will be documented on Form G-3 - Employee Experience Record. Form OST-1 will be filed in the Training Department files section 5.3 after the information is transferred to the individual's records.

The Senior Nuclear Training Specialist will approve BECo time sheets for members of Local #369 UWUA when the members of Local #369 UWUA travel for offsite training.

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The Senior Nuclear Training Specialist will approve BECo time sheets for members of Local #369 UWUA when the members of Local #369 UWUA travel for offsite training.

PNPS OFFSITE TRAINING PLANNING

Name _____ Date _____
Group _____

A. Type of Training and Location _____

B. Dates of Training _____

C. Air transportation needed? NO: _____ YES: _____
Arrangements _____

D. Rental car needed? NO: _____ YES: _____
Arrangements _____

E. Lodging needed? NO: _____ YES: _____
Arrangements _____

F. Petty cash needed? NO: _____ YES: _____
If yes contact office manager. _____
Amount needed _____

G. Other relevant information _____

H. Training completed? YES _____ NO _____

I. Training documented on Form G-3?
YES _____ File this Form - File #5.3.
NO _____ Complete G-3 Form.

Date _____ Signature, Sr. Nuclear Training Specialist