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# PNPS EMERGENCY PLAN

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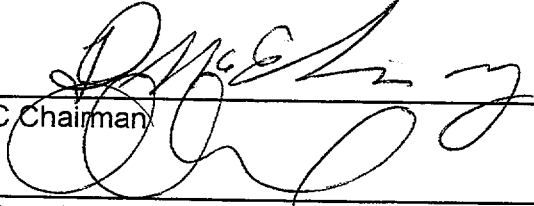
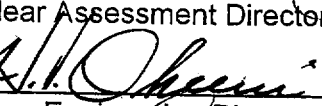
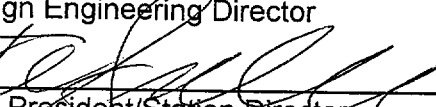
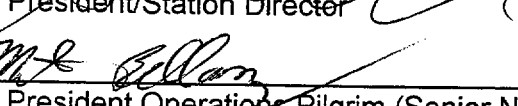

## FOREWORD

As required in the conditions set forth by the Nuclear Regulatory Commission for the operating license for the Pilgrim Nuclear Power Station, the management of the Entergy Nuclear Generation Company recognizes its responsibility and authority to operate and maintain the Pilgrim Nuclear Power Station in such a manner as to provide for the safety of the general public.

This Emergency Plan has been prepared to establish the procedures and practices for management control over unplanned or emergency events that may occur at the Pilgrim Nuclear Power Station.

The issuance and control of this Emergency Plan and the Activities associated with emergency preparedness at the Pilgrim Nuclear Power Station shall be the responsibility of the Senior Nuclear Officer. The Emergency Plan and its implementing procedures meet the requirements for quality assurance as set forth in the Pilgrim Quality Assurance Manual, Volume 2.

The Nuclear Assessment Director is assigned the responsibility for the maintenance of the Emergency Preparedness Programs associated with the operation of Pilgrim Nuclear Power Station as outlined in this document.

 _____ ORC Chairman	Date: <u>3/13/00</u>
 _____ Nuclear Assessment Director	Date: <u>3/13/00</u>
 _____ Design Engineering Director	Date: <u>3/13/00</u>
 _____ Vice President/Station Director	Date: <u>3/14/00</u>
 _____ Vice President Operations Pilgrim (Senior Nuclear Officer)	Date: <u>3/14/00</u>

Conformance to the practices described in this Emergency Plan and the procedures which implement it are required as of the effective date.

Effective Date: 3-15-00

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# PNPS EMERGENCY PLAN

## **Part 1: INTRODUCTION**

### **Section A: Purpose**

This document describes the emergency preparedness program for Entergy Nuclear Generation Company's (Entergy Nuclear) Pilgrim Nuclear Power Station (PNPS). The philosophy that guides the development and maintenance of this program is the protection of the health and safety of the general public in the communities around PNPS and the personnel who work at the plant.

The PNPS Emergency Plan outlines the basis for response actions that would be implemented in an emergency. This document is not intended to be used as a procedure. Detailed PNPS Emergency Plan Implementing Procedures are maintained separately and used to guide those responsible for implementing emergency actions.

This Plan documents the methods by which the PNPS Emergency Preparedness Program meets the criteria set forth in Title 10 of the Code of Federal Regulation (CFR), Part 50, Section 47(b) and Appendix E.

### **Section B: Background**

PNPS is located in the town of Plymouth, Plymouth County, in the Commonwealth of Massachusetts at 41° 56.69 min. North, 70° 34.74 min. West. It is situated on the western coast of Cape Cod Bay, on approximately 1600 acres of land, owned by Entergy Nuclear. The plant is a General Electric Boiling Water Reactor (BWR) design and produces a net electrical output of 685 megawatts. A detailed description of the plant is given in the PNPS Final Safety Analysis Report (FSAR).

The primary hazard consideration at PNPS is the potential unplanned release of radioactive material resulting from an accident at the plant. The probability of such a release is considered very low due to plant design and strict operational guidelines enforced by the Nuclear Regulatory Commission (NRC). However, Federal regulations and common sense require that a solid emergency preparedness program exist for each commercial nuclear power station.

### **Section C: Scope**

This document describes actions to be taken in the event of an accident at PNPS which might lead to impact on the health and safety of the general public.

If such an accident were to occur, the PNPS Emergency Response Organization (as defined in this plan) would be put in place and maintained until such time the plant was returned to a stable condition and the threat to the general public no longer existed. This plan describes the operation of the PNPS Emergency Response Organization. It does not, nor is it intended to provide guidance for actual plant equipment manipulations. These instructions are contained in PNPS normal and emergency operating procedures as required by Technical Specifications and other regulatory guidance. An emergency recovery phase is also described in this plan.

### **Section D: Planning Basis**

Development of this plan was based on NRC Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Plants," and NUREG-0654, FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants", Revision 1. Other applicable regulations, publications and guidance were used (see Appendix 1, "References") along with PNPS documents to ensure consistency in the planning effort.

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This plan was developed in coordination with the Commonwealth of Massachusetts' Comprehensive Emergency Response Plan, Appendix 3, "Radiological Emergency Response Plan for Fixed Nuclear Facilities" and local community emergency response plans.

## **Section E: Form and Content of Plan**

This plan is Appendix N of the PNPS Unit 1 FSAR but is maintained as a separate document.

This Plan has been formatted similar to NUREG-0654, FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants", Revision 1.

The use of this format lends itself to verification of meeting the criteria set forth in NUREG-0654, FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants". Appendix 2, "Procedure Cross-Reference to Sections of the Plan", provides a cross-reference between this plan and the PNPS Emergency Plan Implementing and Administrative Procedures.

This plan is updated as necessary, in accordance with guidance provided by Emergency Preparedness Administrative Procedures. Minor changes in the Emergency Plan such as a change in wording or setpoint that do not affect the intent of the original statement are incorporated in an annual update of the plan. Changes in this plan which add or remove a requirement to or from the Emergency Plan or change the intent of the Emergency Plan require an immediate update to the plan.

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## Part 2: PLANNING STANDARDS AND CRITERIA

### Section A: Assignment of Responsibility

This section describes the primary responsibilities for emergency response by Pilgrim Nuclear Power Station (PNPS), Federal, State, Commonwealth, and local organizations within the PNPS Plume Exposure Pathway and the Ingestion Pathway Emergency Planning Zones (EPZs). Various supporting organizations are also described as well as staffing for initial and continuous response.

1. Concept of Operations: The relationships and the concept of operations for the organizations and agencies supporting a response in the PNPS Emergency Planning Zones are as follows:

a. Identified below are Federal, Commonwealth, State, local, and private organizations that are involved in a response to an emergency at PNPS.

Federal Agencies: The Federal Radiological Emergency Response Plan (FRERP) outlines the statutory and regulatory responsibilities. The primary Federal response at PNPS supporting an emergency include:

- Nuclear Regulatory Commission (NRC), who acts as technical/regulatory advisors to PNPS during an emergency. They provide Federal communications capabilities, coordination of Federal assistance, and assessment of onsite radiological incidents and potential offsite consequences.
- U.S. Department of Energy (DOE), who maintains the Interagency Radiological Assistance Program (IRAP) which provides radiological assistance to utilities, state, and local governments upon request. This assistance is provided through Brookhaven National Laboratory located in Long Island, New York.
- Federal Emergency Management Agency (FEMA), who coordinates the overall offsite Federal response and provides Federal resources and assistance to state and local governments.
- Environmental Protection Agency (EPA), who assists with field radiological monitoring/sampling and non-plant related recovery and reentry guidance.
- U.S. Coast Guard, who assists the Commonwealth and local authorities in the event of a radiological incident which involves a hazard over water.
- National Weather Service, who provides meteorological information to PNPS in the event that the onsite meteorological tower or monitoring instrumentation becomes inoperative. The National Weather Service is located in Boston at the Logan International Airport.

Commonwealth Agencies: The Commonwealth of Massachusetts Radiological Emergency Response Plan (RERP), provides for assistance from the Commonwealth agencies described below. The plan calls for supplemental support from Federal, Commonwealth, and local agencies.

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The Massachusetts Emergency Management Agency (MEMA), Framingham, provides resources to support community response and perform technical response functions for the communities. Its supporting organization are:

- MEMA State Emergency Operations Center(SEOC)
  - Activates and manages the MEMA Headquarters EOC and activates the Emergency Alert System (EAS).
  - Provides resources to support community response.
  - Coordinates public notification.
  - Performs offsite support response functions on behalf of the communities.
- Massachusetts Department of Public Health (MDPH)
  - Recommends protective actions to the Governor.
  - Performs accident assessment functions, environmental monitoring and sampling.
  - Provides for laboratory analysis of environmental samples.
- Massachusetts State Police
  - Provides support for traffic, access control, and security for MEMA Headquarters EOC.
  - Coordinates the activation of the Prompt Alert Notification System (PANS) during a rapidly escalating incident.
  - Assists in coordination and implementation of protective actions in conjunction with MEMA.
- Massachusetts Highway Department
  - Provides traffic and access control equipment.
  - Provides resources to keep roads passable.
- Massachusetts National Guard
  - Supports law enforcement agencies for traffic and access control, and security for evacuated areas.
  - Transports emergency supplies.
- Massachusetts Department of Environmental Protection
  - Collects samples from public drinking water supplies within the Ingestion Exposure Pathway EPZ upon request of MDPH.
  - Restricts the use of public drinking water supplies found to be contaminated.
- Massachusetts Department of Environmental Management
  - Provides emergency notification in state parks.

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- Massachusetts Department of Food and Agriculture
  - Controls contaminated foodstuffs.
  - Maintains list of agricultural facilities within the Ingestion Exposure Pathway EPZ.
- Massachusetts Department of Fisheries, Wildlife and Environmental Law Enforcement
  - Collects shellfish samples within the Ingestion Exposure Pathway EPZ.
  - Controls contaminated aquatic foods.
- MEMA Area II, Bridgewater, supports community response and coordinates integrated community functions. It coordinates information and resources between the Commonwealth and communities. The MEMA Area II supporting operations are:
  - Directly supports EPZ and host community response and coordinates functions that require an integrated community effort.
  - Coordinates information and resources between the Commonwealth and local government.
- Massachusetts State Police Troop D
  - Provides back-up emergency notification to Commonwealth and local governments.
  - Activates and coordinates the State Police Traffic Control Plan.
- Massachusetts Highway Department Districts 4 and 5
  - Coordinates Commonwealth traffic and access control equipment support.
  - Assists local public works departments to assure that roads remain passable.
- Massachusetts National Guard
  - Coordinates National Guard transportation resources.
  - Coordinates National Guard support for traffic and access control, and security for evacuated areas.
  - Supports Area II EOC operations.
- Massachusetts Red Cross
  - Coordinates Red Cross activities at mass care shelters.

### State of Rhode Island Agencies

- Rhode Island Emergency Management Agency (RIEMA)
  - Assumes overall coordination of State activities in an emergency situation.
- Rhode Island Atomic Energy Commission
  - Provides technical guidance to state agencies.

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- Rhode Island State Police
  - Coordinates communications between Rhode Island and other groups.
- Rhode Island Department of Health (RIDOH)
  - Coordinates all state sampling, analysis and protective action guides.
  - Establishes a system of keeping medical records on events related to incident.

Typical Local Government Agencies: PNPS and the surrounding communities which comprise the PNPS Plume Exposure Pathway EPZ and Reception Centers, have developed integrated emergency response programs which call upon the resources of their community. The community organizations are responsible for implementing and coordinating the community response to an emergency at PNPS. Typical key departments/individuals are identified below:

- Board of Selectmen
  - Provides overall control of emergency response.
  - Ensures 24-hour staffing of emergency organization.
  - Approves public information news statements.
  - Declares a local State of Emergency.
  - Ensures activation of Prompt Alert Notification System (PANS).
  - Ensures implementation of the protective action directives.
  - Directs town recovery, re-entry, and relocation activities.
- Emergency Management Agency
  - Activates and manages the EOC.
  - Coordinates response operations.
  - Provides information to the Commonwealth on local conditions.
  - Obtains additional resources needed for response.
  - Maintains the emergency response program.
  - Coordinates training, drills and systems tests.
- Police Department
  - Receives and performs emergency notification.
  - Provides security at the EOC.
  - Provides police communications support from the EOC.
  - Assists in notification to beach and pond population.
  - Activates the siren system when directed.
  - Assists in route alerting.
  - Coordinates traffic flow for evacuation.

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- Recommends alternate evacuation routes.
- Controls access to affected areas.
- Provides security for evacuated areas.
- Fire Department/Emergency Medical Services
  - Receives and performs emergency notification.
  - Provides firefighting support to PNPS.
  - Coordinates town ambulance service activities.
  - Coordinates mutual aid emergency medical services as needed.
  - Activates the siren system when directed.
  - Conducts route alerting, as necessary.
- Council on Aging
  - Coordinates notification and assistance to the special needs population.
  - Coordinates transportation for special needs population.
- Public Works Department
  - Maintains evacuation routes in passable condition.
  - Provides traffic and access control equipment.
  - Restricts surface water supply to public, if necessary.
  - Maintains operation and integrity of sewer system.
  - Assists in establishing alternate evacuation routes, as necessary.
  - Provides transportation for emergency workers and equipment.
  - Assists in route alerting and notification to beach and pond population.
- Harbor Master
  - Provides emergency notification to boaters.
  - Assists in controlling access to marine areas.
  - Coordinates response actions with U. S. Coast Guard.
- School Department
  - Notifies and implements protective actions for the school population.
  - Coordinates transportation of school population.
  - Provides facilities to support transportation assistance and/or sheltering of the public.
- Health Department
  - Notifies camps, campgrounds, and industries and coordinates transportation needs.
  - Notifies key employers.
  - Notifies the hospital and nursing homes and coordinates transportation needs.

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- Operations Officer
  - Coordinates EOC operations.
  - Assists EOC staff in resolving operational problems.
  - Ensures EOC staff are updated on events.
- Radiological Officer
  - Distributes dosimetry, potassium iodide (KI), and record forms to emergency workers.
  - Monitors radiation levels at EOC.
  - Ensures emergency worker exposure limit procedures are followed.
  - Advises EOC staff on emergency worker exposure.
  - Maintains emergency worker radiological records.
  - Ensures maintenance and availability of radiological equipment.
  - Coordinates radiological monitoring and decontamination at REWMDS and the reception centers.
- Transportation Officer
  - Coordinates staging area operations.
  - Ensures adequate transportation resources are mobilized to assist the general public schools, special facilities, and special needs persons.
- Public Information Officer
  - Provides information on town response to MEMA Public Information Officer (PIO) at the Media Center.
  - Provides for rumor control on town -specific response actions.
- Shelter Officer
  - Coordinates operations of public shelters.

### Industry/Private Organizations

- Jordan Hospital, located in Plymouth, is the primary care facility for treatment of contaminated injured persons, and for evaluation of radiation overexposure and radionuclide uptake (Radiological and the Medical Department determine who needs evaluation). Morton Hospital, located in Taunton, is designated as a back-up hospital and is equipped and trained to handle contaminated injured individuals. Individuals with severe radiation overexposure may be taken to a hospital as designated by MDPH.
- Duke Engineering & Services, through a mutual agreement provides certain types of services, including environmental monitoring and analysis, engineering, design, consultation, whole body counting, dosimetry evaluation and equipment, and facilities for an Alternate Media Center.



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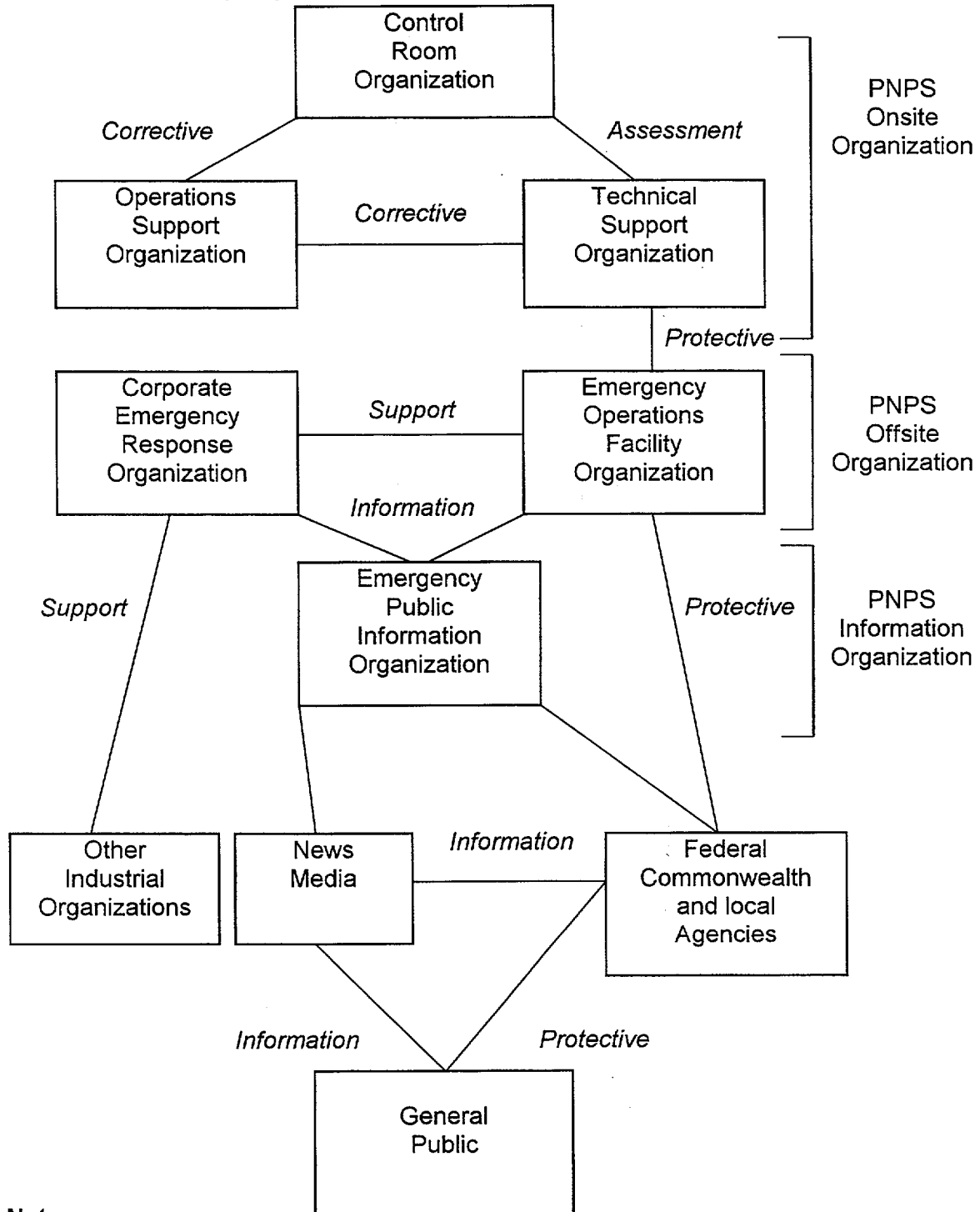
- The Institute of Nuclear Power Operations (INPO) is able to provide:
    - Assistance in locating sources of emergency manpower and equipment.
    - An organization of industry experts who could advise on technical matters.
    - Analysis of operational aspects to the incident.
  - American Nuclear Insurers (ANI) provides insurance to cover PNPS legal liability up to the limits imposed by the Price-Anderson Act, for bodily injury and/or property damage caused by the nuclear energy hazard resulting from an incident at PNPS.
  - Other industry organizations (engineering firms, construction firms, etc.) may be called on to provide assistance as needed.
- b. During an emergency condition at an Alert, Site Area Emergency, or General Emergency level, the PNPS Emergency Response Organization replaces the normal plant organization. The PNPS Emergency Response Organization consists of three major response sub-organizations:
- The Onsite Organization, directed by the Emergency Plant Manager, provides for:
    - Control and operation of the plant.
    - Mitigation of the emergency condition.
    - Protection of station personnel.
    - Initial assessment of the emergency.
    - Notification of the appropriate individuals and agencies prior to EOF activation.
    - Emergency support for operations, engineering, maintenance, fire fighting, material acquisition, security, and first aid.
  - The Offsite Organization, directed by the Emergency Offsite Manager, provides for:
    - Emergency notifications
    - Offsite radiological accident assessment and protective action recommendations to offsite authorities
    - It serves as the primary interface between PNPS and outside organizations responsible for the protection of the public.
  - The Public Information Organization, directed by the Company Spokesperson, coordinates with public information officers from other organizations to provide emergency information to the public through the news media.
- c. Interrelationships between major PNPS organizations and sub-organizations in the total response effort are illustrated in a block diagram in Figure A-1. For a more detailed diagram of the PNPS Emergency Response Organization, see Figure B-1.
- d. The Emergency Director is the senior PNPS manager in charge of emergency response and has overall authority and responsibility for coordinating all emergency response actions at PNPS.

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- e. The PNPS Emergency Response Organization is composed of pre-designated Station personnel available and trained to augment the on-shift complement in an emergency. Procedures for training and maintenance of the emergency organization are in place to assure 24-hour per day staffing for emergency response. The normal on-shift complement provides the initial response to an emergency. This group is trained to handle emergency situations, e.g. initiate the implementation of the PNPS Emergency Plan, make initial accident assessment, emergency classification, notifications, and protective action recommendations until Emergency Response Organization activation occurs.
2. Commonwealth and Local Functions and Responsibilities: The Commonwealth, the local towns and reception center communities have Radiological Emergency Response Plans (RERPs) that specify the responsibilities and functions for the major agencies, departments, and key individuals of their emergency response organizations. This information is located in their respective plans.
3. Agreements in Planning Effort: Written agreements with support organizations having an emergency response role within the PNPS EPZs (including hospitals and medical transportation) are provided in Appendix 3, "Copies of Letters of Agreement". These agreements identify the emergency measures to be provided, the mutually accepted criteria for implementation, and the arrangements for exchange of information. Federal, Commonwealth, State, and local agencies that have response functions covered by laws, regulations, or executive orders have developed plans to meet these functions. These approved Plans serve as written agreements for agencies response to an incident at PNPS.
4. Continuous Coverage: The PNPS Emergency Response Organization has sufficient numbers of qualified, trained personnel to provide the capability of continuous (24-hour) operations. The PNPS Emergency Telephone Directory is reviewed and updated on a quarterly basis and identifies these individuals. The Nuclear Assessment Director administers the program to ensure availability of resources in the event of an emergency. The Emergency Director has the authority and is responsible for assuring continuity of resources (technical, administrative, and material) in the event of the activation of the PNPS Emergency Response Organization.

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Figure A-1: Emergency Response Organization Interrelationships



**Notes:**

1. The Control Room initially interfaces with offsite agencies
2. All PNPS Facilities interface directly with the Nuclear Regulatory Commission's Emergency Response Team when they arrive.
3. The interface is depicted in italics, e.g. assessment actions, corrective actions, protective actions, and information transfer.

# PNPS EMERGENCY PLAN

## Section B: Station Emergency Organization

This section describes the Pilgrim Nuclear Power Station (PNPS) Emergency Response Organization, its key positions and associated responsibilities. It outlines the staffing requirements which provide initial emergency response actions and provisions for timely augmentation of on-shift personnel when required. It also describes interfaces among PNPS response personnel and specifies offsite support available to respond to the PNPS.

1. PNPS Emergency Response Organization Assignments: Table B-1 outlines the PNPS on-shift complement and their emergency duties. Members of the on-shift organization are trained on their responsibilities and duties in the event of an emergency, and are capable of performing all response actions in an Unusual Event, and the initial actions of higher classifications. Table B-1 further lists key PNPS Emergency Response Organization positions required to meet minimum augmentation capabilities for the on-shift complement at an Alert or higher classification. Each Emergency Response Facility lead has the authority to, if necessary to activate the facility, designate personnel to fill Emergency Response Organization positions. These designations should be limited to one shift or until assigned personnel arrive.

The normal PNPS personnel complement is established with the Senior Nuclear Officer having overall authority for Station operations (the Operations Shift Superintendent always retains the responsibility for actual operation of plant systems). The Senior Nuclear Officer directs senior Nuclear Organization staff in the management of the various department/organizations. When an emergency is declared, the normal organization structure is replaced by the PNPS Emergency Response Organization. PNPS Emergency Response Organization personnel are selected based on comparison of the emergency functions they are to perform with their normal daily tasks and prior training. A Nuclear Organization Procedure outlines job descriptions for the PNPS Emergency Response Organization. Key positions are normally filled from the Nuclear Organization as listed below. However, due to the large amount of cross training and diversification across all areas within the Nuclear Organization, positions can be staffed from any part of the Nuclear Organization where personnel may be found with the capacity and expertise to perform the assigned emergency function as described in NOP88A4.

- a. The Emergency Director is the Senior Nuclear Officer or a designated alternate from the Nuclear Organization senior management staff.
- b. The Emergency Plant Manager is the Operations and Plant Management Director or a designated alternate from the PNPS staff.
  - The *Emergency Plant Operations Supervisor* is a member of Plant Operations who holds an operator's license on PNPS.
  - The *Technical Support Center Supervisor* is assigned from Nuclear Services
  - The *Operations Support Center Supervisor* is the Plant Production Director or a senior member of Plant Production.
  - The *Emergency Security Supervisor* is the Nuclear Security Superintendent or a designated alternate from Nuclear Security.
  - The *Onsite Radiological Supervisor* is the Radiation Protection Superintendent or a designated senior member of Radiation Protection.

## PNPS EMERGENCY PLAN

- c. The Emergency Offsite Manager is a senior member of or a designated alternate from the Nuclear Assessment Group.
    - The *Offsite Radiological Supervisor* is normally from the Nuclear Assessment Group or Radiation Protection.
    - The *Emergency Communication Supervisor* is normally selected from Nuclear Training (any management level supervisor who has communication skills and can coordinate emergency communication efforts may be used to fill this position).
    - The *Logistics Supervisor* is normally a member of Nuclear Business Management or Nuclear Administrative Services.
    - The *Community and MEMA Technical Liaisons* are members of the Nuclear Assessment Group and/or support organizations.
    - The *Regulatory Liaison* is a Senior Engineer or a designated alternate from the Nuclear Assessment Group.
    - The *Corporate Support Coordinator* is a member of the PNPS management staff.
  - d. The Company Spokesperson is a senior member of the PNPS management staff.
    - The *Media Center Supervisor* is a member of PNPS management staff familiar with Media Center operations.
2. Authority Over PNPS Emergency Response Organization: The Emergency Director has overall authority and responsibility for coordinating all emergency response activities at PNPS. Detailed responsibilities are described in Part 4 of this section. The Operations Shift Superintendent, or in his absence from the Control Room, the Control Room Supervisor assumes the position of Emergency Director until the Senior Nuclear Officer or a designated alternate arrives at the Emergency Operations Facility and assumes the position.
  3. Succession to Emergency Director: Initially, the Operations Shift Superintendent or the Nuclear Control Room Supervisor assumes the duties and responsibilities as the Emergency Director. When augmentation of the on-shift complement occurs, the Senior Nuclear Officer or a designated alternate reports to the EOF and, once briefed, relieves the Operations Shift Superintendent of all Emergency Director responsibilities. Once the on-call Emergency Director assumes the Emergency Director responsibilities, overall command and control of the emergency transfers from the Control Room to the EOF. The Emergency Plant Operations Supervisor may relieve the on-shift Emergency Director until such time as the on-call Emergency Director arrives, however he/she must report and remain in the Control Room until relieved.
  4. Emergency Director Responsibilities: The Primary responsibilities assigned to the Emergency Director are to:
    - Classify the emergency situation using established Emergency Action Levels and periodically review the classification to ensure that it reflects current plant conditions. This responsibility is NON-DELEGABLE.

# PNPS EMERGENCY PLAN

- Approve notifications/communications to local, Commonwealth, State, and Federal government agencies and ensure that correct notifications and information updates are made in a timely manner. This responsibility is NON-DELEGABLE.
- Provide Protective Action Recommendations (PARs) to authorities responsible for protection of the general public. This responsibility is NON-DELEGABLE.
- Terminate the event and initiate the recovery phase. This responsibility is NON-DELEGABLE.
- At an Alert or higher classification (or when the EOF is activated), authorize PNPS press releases. This responsibility is NON-DELEGABLE.
- Waive initial requirements for access authorization to PNPS. This responsibility is NON-DELEGABLE.
- Ensure appropriate emergency procedures are implemented.
- Ensure all PNPS emergency response facilities are activated and properly staffed.
- Request required assistance from corporate and/or offsite organizations and agencies.
- Authorize radiation exposures for PNPS emergency workers in excess of 10CFR20 limits and use of potassium iodide as a thyroid blocking agent. This responsibility may be and normally is delegated to the Emergency Plant Manager for onsite personnel.

The Emergency Director oversees the PNPS Emergency Response Organization's interfaces with local, Commonwealth, State, and Federal authorities. The Emergency Plant Manager, the Emergency Offsite Manager, and the Company Spokesperson report directly to the Emergency Director.

## 5. PNPS Emergency Response Organization

The Emergency Plant Manager is the senior individual located at the site and is responsible for:

- Activities associated with PNPS operations (the Operations Shift Superintendent retains authority for actual operation of plant systems).
- Plant accident assessment.
- Emergency classification recommendations to the Emergency Director based on plant parameters.
- Onsite actions taken to mitigate the emergency situation.
- Protective actions for PNPS personnel, including directing site evacuation activities, authorizing emergency exposures and use of potassium iodide, if delegated by the Emergency Director.
- Determination of emergency responders ability to perform their assigned duties under Fitness For Duty criteria at PNPS.

The Emergency Director normally delegates the responsibilities of authorizing onsite emergency worker exposures in excess of 10CFR20 limits and the use of potassium iodide to the Emergency Plant Manager. These responsibilities may not be delegated further.

## PNPS EMERGENCY PLAN

The Emergency Plant Manager interfaces with the Emergency Offsite Manager. The Emergency Plant Manager is normally located in the Technical Support Center. The following positions report to the Emergency Plant Manager:

The Emergency Plant Operations Supervisor is the senior management position in the Control Room and is responsible for coordination of the Control Room activities with all outside emergency facilities. The Emergency Plant Operations Supervisor does not relieve the Operations Shift Superintendent of responsibilities for operation of the plant. This position advises the Emergency Plant Manager on plant status and trends and their potential impact.

The Emergency Plant Operations Supervisor interfaces with the Technical Support Center Supervisor, Operations Support Center Supervisor, Onsite Radiological Supervisor and the Emergency Security Supervisor.

The Technical Support Center Supervisor supervises engineering activities associated with mitigation of the emergency situation. This position advises the Emergency Plant Manager on proposed corrective actions and emergency classification from a technical standpoint (i.e. plant system damage, core damage, etc.). The TSC Supervisor is responsible for the activation and proper staffing of the TSC. This includes the Engineering Support/Technical Assessment Group.

The Technical Support Center Supervisor interfaces with the Emergency Plant Operations Supervisor, Operations Support Center Supervisor, Onsite Radiological Supervisor and the Emergency Security Supervisor.

The Operations Support Center Supervisor supervises emergency repair teams, search and rescue teams, first aid teams, fire fighting and chemistry teams associated with accident mitigation. This position works with the Operations Support Center Activities Coordinator to provide for maintenance of accountability for operations personnel dispatched into the plant during the emergency. The Operations Support Center Supervisor assesses the manpower requirements and technical skill levels required to mitigate the emergency situation and requests augmentation of the Operations Support Center (OSC) staff as appropriate.

The Operations Support Center Supervisor interfaces with the Technical Support Center Supervisor, Emergency Plant Operations Supervisor, Radiation Protection Coordinator, Emergency Security Supervisor and the Logistics Supervisor.

The Onsite Radiological Supervisor supervises the analysis of radiological data and radiation protection measures for personnel inside the Protected Area. This position is responsible for all radiological aspects of the emergency for the plant and making recommendations to the Emergency Plant Manager on classification, onsite protective actions and corrective actions based on this data. Initially, unless directed to do otherwise by the Operations Shift Superintendent, the on-shift Radiation Protection Supervisor/Technician performs the duties of Onsite Radiological Supervisor until relieved.

The Onsite Radiological Supervisor interfaces with the Technical Support Center Supervisor, the Operations Support Center Supervisor and the Offsite Radiological Supervisor.

## PNPS EMERGENCY PLAN

The Emergency Security Supervisor supervises the Station security forces. This position is responsible for the coordination of Protected Area accountability and evacuation, emergency access to vital areas and physical security of the Station. The Emergency Security Supervisor keeps the Emergency Plant Manager informed of all security concerns as they pertain to mitigation of the emergency. In addition, the Emergency Security Supervisor coordinates the security activities of all Pilgrim Station emergency response facilities. Initially, the Security Operations Supervisor performs the duties of the Emergency Security Supervisor until relieved.

The Emergency Security Supervisor interfaces with the Emergency Plant Operations Supervisor, the Operations Support Center Supervisor, the Technical Support Center Supervisor and the Logistics Supervisor.

The Emergency Offsite Manager is responsible for the overall operation of the Emergency Operations Facility (EOF) including:

- Coordination of all radiological dose assessment activities, formulation of PARs, and presentation of PARs to the Emergency Director.
- Determination of emergency responders ability to perform their assigned duties under Fitness For Duty criteria at the EOF.
- Interface with the Corporate Emergency Center through the Corporate Support Coordinator.
- Ensure timely communications with local, Commonwealth, and federal agencies after activation of the EOF.

The Emergency Offsite Manager interfaces with the Emergency Plant Manager and the Company Spokesperson. The following positions report to the Emergency Offsite Manager:

The Offsite Radiological Supervisor has the responsibility for computation and evaluation of projected dose rates, exposures, environmental impacts and PARs for areas outside of the Protected Area. This position utilizes Dose Assessment Engineers, the Radiation Laboratory and Monitoring Team Coordinator and Radiation Monitoring Teams and is the Emergency Offsite Manager's radiological advisor. The Offsite Radiological Supervisor is responsible for radiological exposure controls for all PNPS response personnel outside the Protected Area.

The Offsite Radiological Supervisor interfaces with the EOF Operations Advisor and the Onsite Radiological Supervisor.

The Emergency Communications Supervisor is responsible for supervising communications and notifications with Federal, local, Commonwealth, and State emergency organizations and maintaining logs and status boards in the EOF.

The Logistics Supervisor is responsible for initial and relief staffing during an extended emergency and logistical support (food, transportation, equipment maintenance, etc.). The Logistics Supervisor coordinates with the Corporate Radiological Emergency Response Organization (defined in the PNPS/Entergy Nuclear Corporate Radiological Emergency Response Plan) as necessary to provide logistical support.



## PNPS EMERGENCY PLAN

The Logistics Supervisor interfaces with the Technical Support Center Supervisor, the Operations Support Center Supervisor, the Corporate Support Coordinator, and the Emergency Security Supervisor.

The Regulatory Liaison is responsible for assisting the NRC and Federal Emergency Management Agency (FEMA) response teams located at the EOF or other PNPS facilities.

The Corporate Support Coordinator is responsible for interfacing with the Corporate Emergency Center to ensure that Company resources are available to the Emergency Director, and to ensure that senior management has sufficient information to develop Company policy decisions in a timely manner.

The Company Spokesperson is authorized to deliver public statements on behalf of Pilgrim Station pertaining to information approved by the Emergency Director during emergency conditions at PNPS. The Company Spokesperson oversees the flow of information from the Media Center and assures that information is provided to the news media in an accurate and timely manner and is coordinated with responding government agencies.

The Company Spokesperson interfaces with the Emergency Offsite Manager and Public Information Officers from Commonwealth and Federal government agencies.

The Media Center Supervisor is responsible for the efficient operation of the PNPS public information effort at the Media Center during an emergency at PNPS. This position assures coordination with Commonwealth and Federal agencies in providing information to the public through the news media.

Table B-1 outlines key emergency response positions, their expected response times and the major tasks assigned to each position.

6. PNPS Emergency Response Organization Block Diagram: Figure B-1 illustrates the positions of the PNPS Emergency Response Organization and supporting positions. Positions are assigned to interface with Federal, Commonwealth, State, and local authorities. Section B.5 discusses specific responsibilities and the interrelationships for key positions.
7. Corporate Emergency Response: The PNPS/Entergy Nuclear Corporate Radiological Emergency Plan (CREP) and its associated implementing procedures describe the support provided to the PNPS Emergency Response Organization by Entergy Nuclear. Provisions exist in the PNPS Emergency Plan Implementing Procedures to integrate support available at the corporate level.
8. Private Industry Support: PNPS maintains a list of approved contractor and private organizations that provide technical assistance and can augment the PNPS staff during normal operations in the Emergency Telephone Directory. In addition, industry resource (Institute of Nuclear Power Operations, American Nuclear Insurers, etc.) lists are maintained that identify specialized resources. These organizations may be called on to assist during an emergency or during the recovery phase.

## PNPS EMERGENCY PLAN

9. Offsite Emergency Assistance to PNPS: PNPS is located in the Town of Plymouth and served by Town departments and local medical services. The following organizations have entered into agreements to support PNPS in the event of an emergency:
- a. The Plymouth Fire Department has agreed to provide:
    - Fire protection assistance for the site.
    - Emergency ambulance service.
    - Rescue assistance to the public for the open areas of the site.
    - Storage of emergency equipment supplied by PNPS (back up breathing air compressor).
  - b. The Plymouth Police Department has agreed to:
    - Control access on town roads in the vicinity of the site, including the erection of barricades on Rocky Hill Road if needed.
    - Initiate evacuation of the public from the site.
    - Provide offsite storage of emergency equipment.
  - c. Jordan and Morton Memorial Hospitals have agreed to provide medical treatment to contaminated and injured personnel or radiation overexposure victims from PNPS and participate in at least one Emergency Medical Drill per calendar year rotating between hospitals. Additional hospitals have agreed to provide similar services for the treatment of offsite personnel contaminated and injured during an accident at PNPS.
  - d. American Medical Response Ambulance Service provides emergency ambulance service to PNPS through a contract with the Plymouth Fire Department. This includes the transport of contaminated and injured personnel or radiation overexposure victims.

Sample copies of these letters of agreement are displayed in Appendix 3 of this Plan. The original letters are maintained in the Emergency Preparedness files. Letters of Agreement are renewed annually.

## PNPS EMERGENCY PLAN

Table B-1: Minimum Staffing Requirements for the PNPS ERO

Functional Area	Major Task	Position Title	Response
Plant Operations	Plant Stabilization	Operations Shift Superintendent	On Shift#
Assessment of Operational Aspects	Accident Mitigation	Control Room Supervisor Lic. Nuc. Plant Operator (2) Unlic. Nuc. Plant Operator (2)	On Shift# On Shift# On Shift#
Emergency Direction	Emergency Classification	Operations Shift Superintendent	On Shift#
Emergency Control	PARs	Control Room Supervisor Emergency Director Emergency Plant Ops Supv	On Shift# 60 min. 60 min.
Notification and Communications	Notification of PNPS, Local, Commonwealth, and Federal personnel and Maintain Communications	Operations Assistant Emergency Comm Supv Communications Staff (2)	On Shift# 30 min. 60 min.
Rad Accident Assessment	EOF Direction	Emergency Offsite Manager	60 min.
Ops Accident Assessment Support	Offsite Dose Assessment	Offsite Radiological Supv	30 min.
	Offsite Surveys	RMT Member (2) RMT Member (2)	30 min. 60 min.
	Onsite and In-plant Surveys	RP Technician (2) RP Technician (2) RP Technician (2)	On Shift# 30 min. 60 min.
	Chemistry / Radiochemistry	Radio Chem. Technician Radio Chem. Technician	On Shift# 60 min.
Plant System Engineering	TSC / OSC Direction	Emergency Plant Manager	60 min.
Repair and Corrective Actions	Technical Support	Engineer (Shift Control Rm)* Engineer (Reactor) Engineer (Mechanical) Engineer (Electrical)	On Shift# 30 min. 60 min. 60 min.
	Equipment Repairs	Nuclear Maint. Technician @	On Shift#
	Corrective Actions	Nuclear Maint. Technician Nuc. Plant Reactor Operator Nuc. Plant Reactor Operator Nuclear Maint. (Electrical) @ Nuclear Maint. (Electrical) Nuclear Maint. (Electrical) Nuclear Control Technician Nuclear Control Technician	60 min. On Shift# 60 min. On Shift# 30 min. 60 min. On Shift# 30 min.
Protective Actions (In Plant)	Radiation Protection, Access Control, RP Coverage, Personnel Monitoring, and Dosimetry	RP Technician (2)*** RP Technician (2) RP Technician (2)	On Shift# 30 min. 60 min.
	Fire fighting	Fire Brigade* Plymouth Fire Dept.	On Shift# On Call
	Rescue Ops and First Aid	EMT Ambulance Service	On Shift# On Call
Site Access Control and Personnel Accountability	Security	Security Force**	On Shift#

# On Shift - A person is said to be on shift when, during normal or authorized overtime hours, that person is within the PNPS owner controlled areas or on the connecting roads between them with Station Management approval.

\* Position staffed in accordance with technical specifications.

\*\* Position staffed in accordance with technical specifications and station procedures.

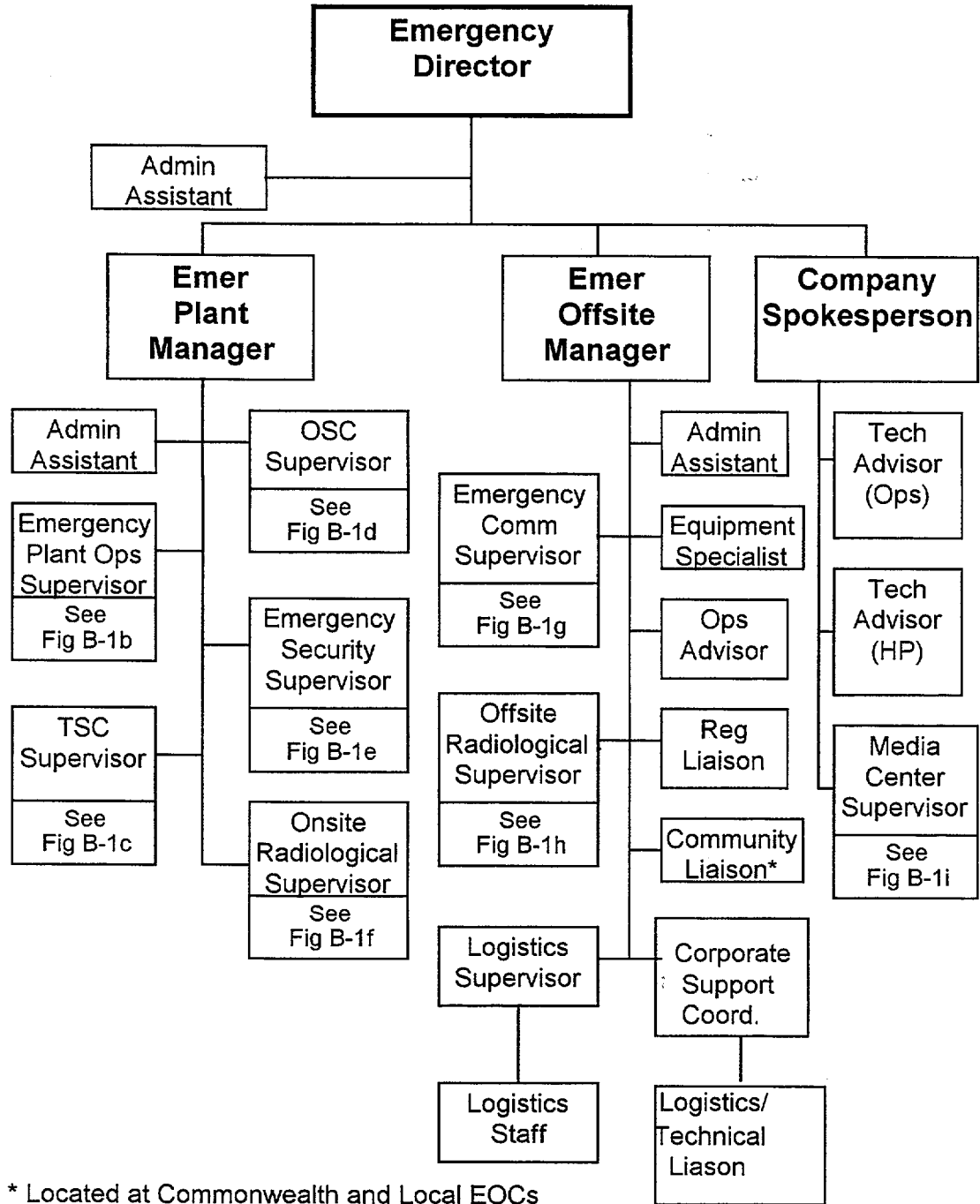
@ One individual may perform both mechanical and electrical functions, if qualified to do so.

\*\*\* Task shared with RP Technicians assigned to in-plant surveys.

NOTE: Response times are based on optimum travel conditions.

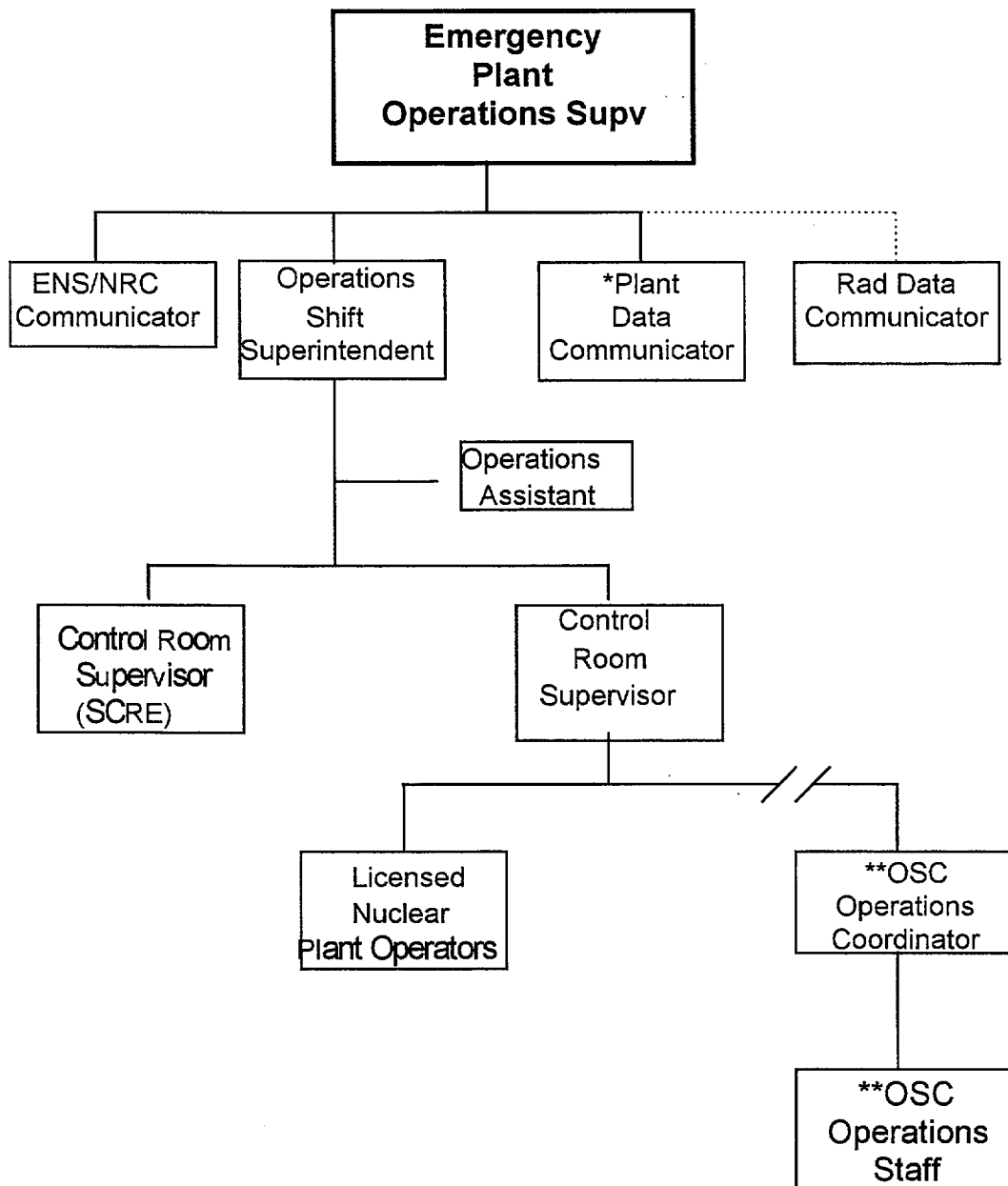
# PNPS EMERGENCY PLAN

Figure B-1a: PNPS Emergency Organization



# PNPS EMERGENCY PLAN

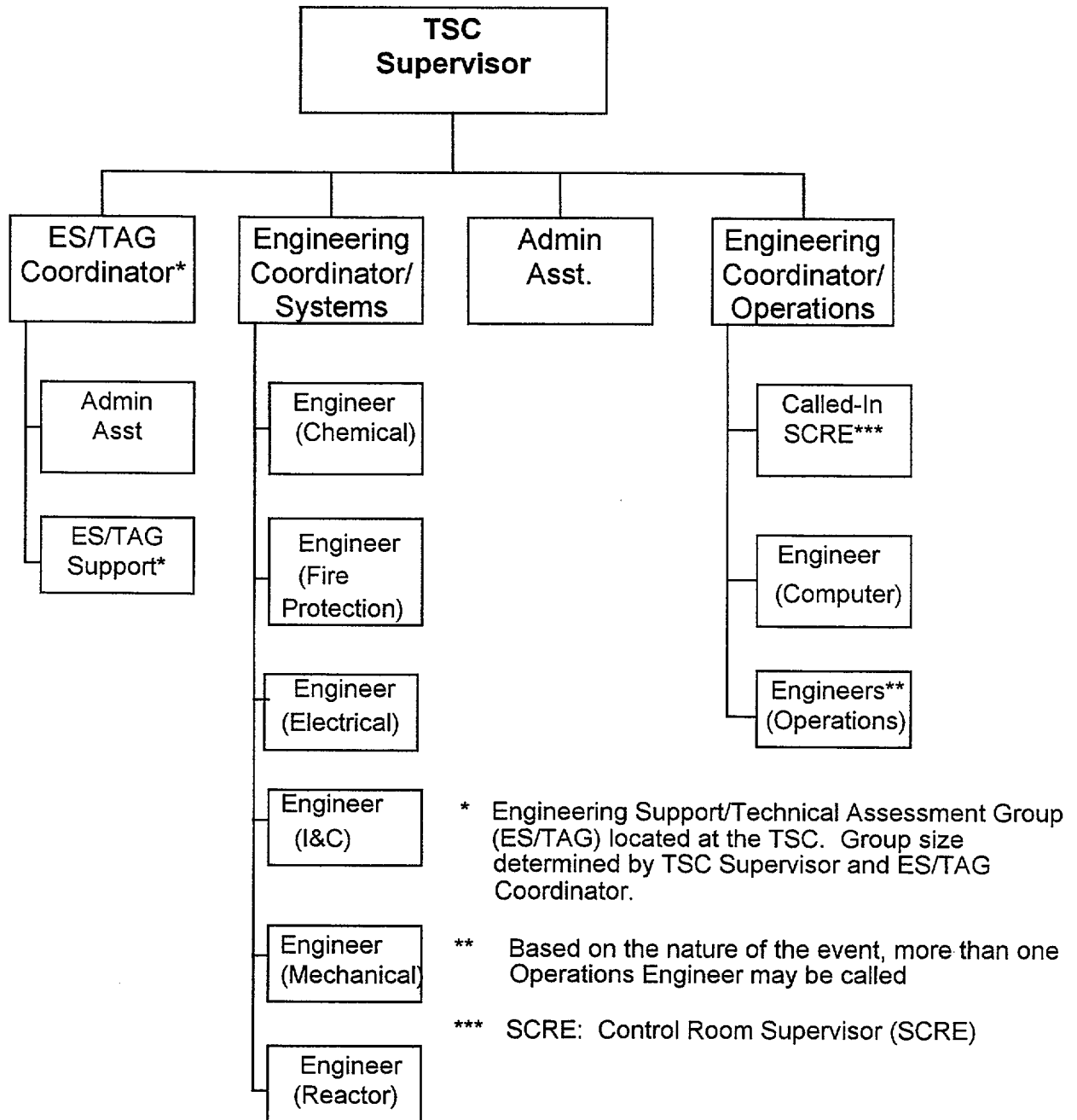
Figure B-1b: Operations Emergency Organization



\* Required if SPDS is inoperable  
\*\* Located in the OSC

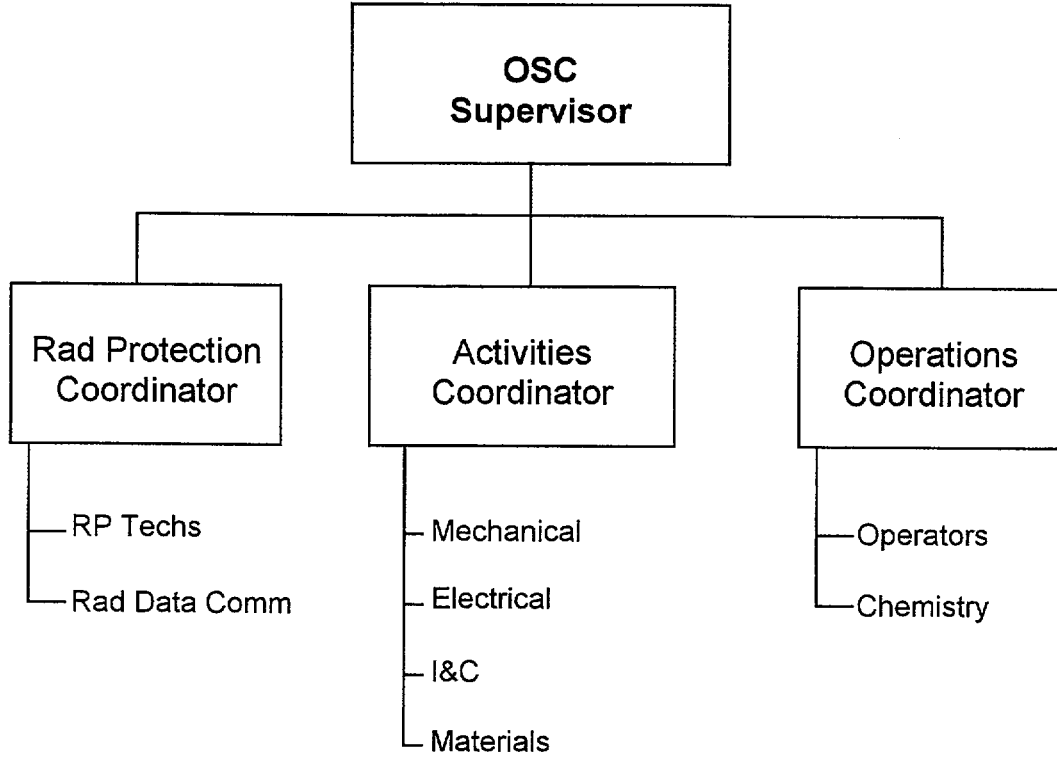
# PNPS EMERGENCY PLAN

Figure B-1c: Technical Support Organization



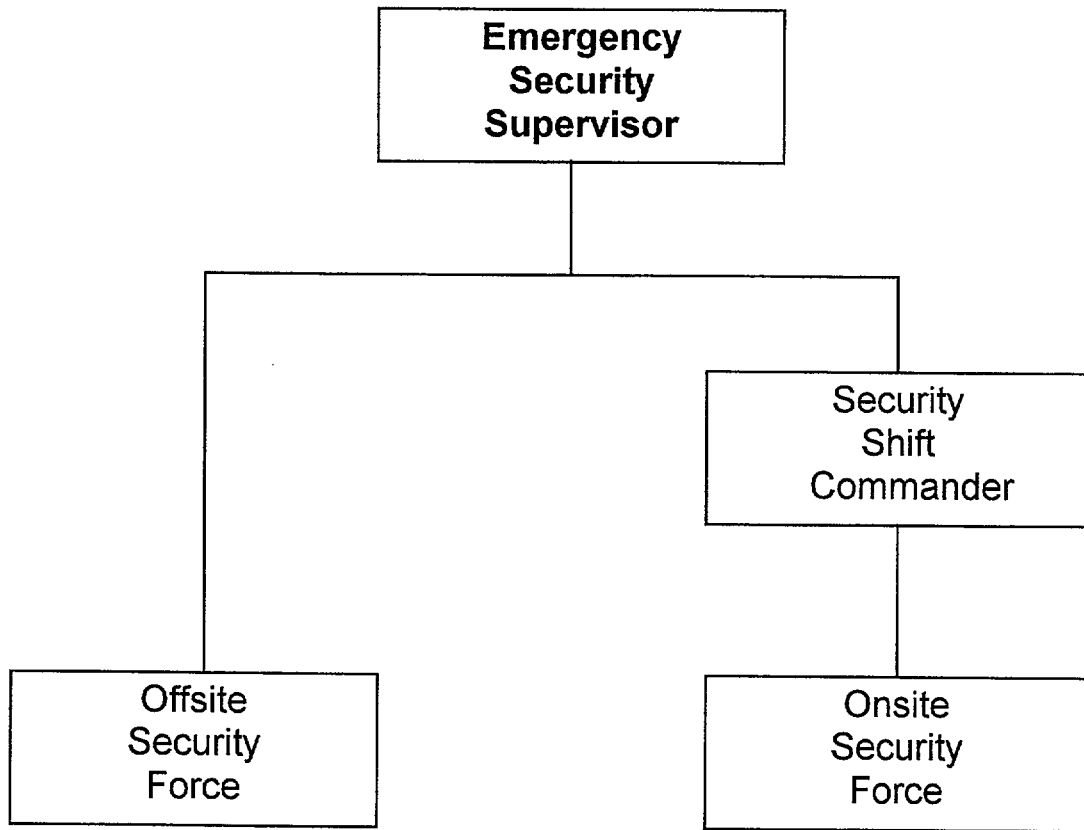
# PNPS EMERGENCY PLAN

Figure B-1d: Operations Support Organization



# PNPS EMERGENCY PLAN

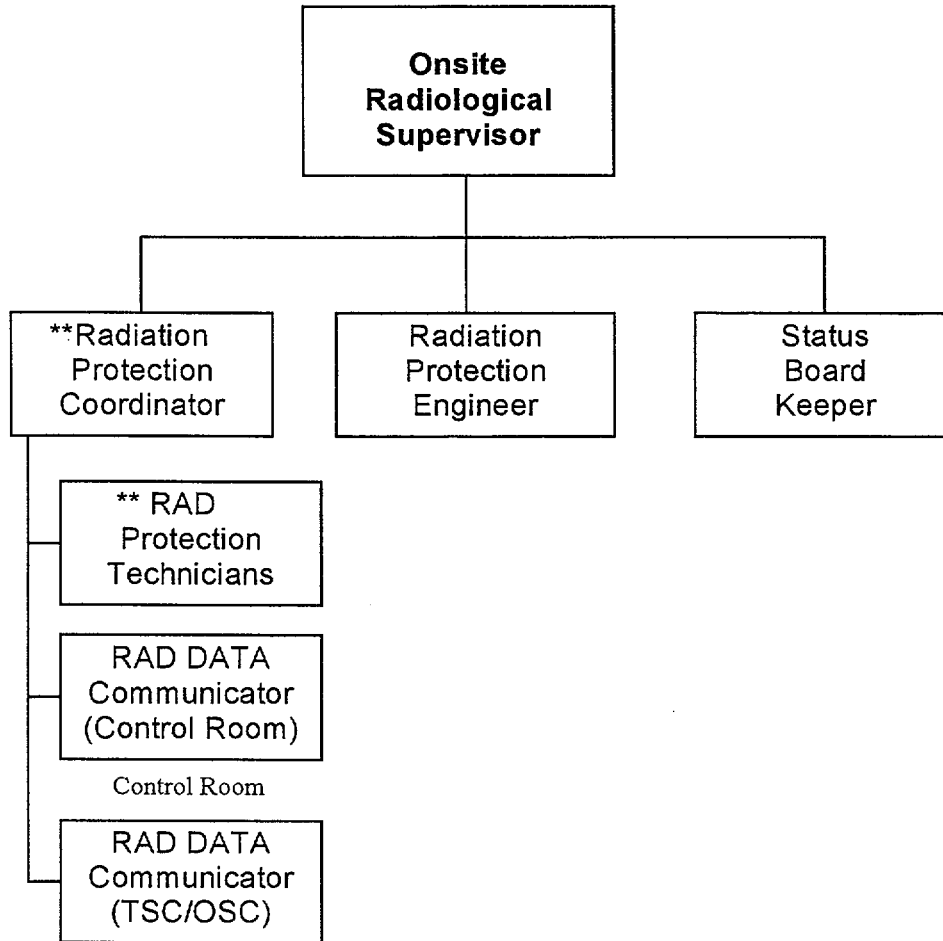
Figure B-1e: Emergency Security Organization





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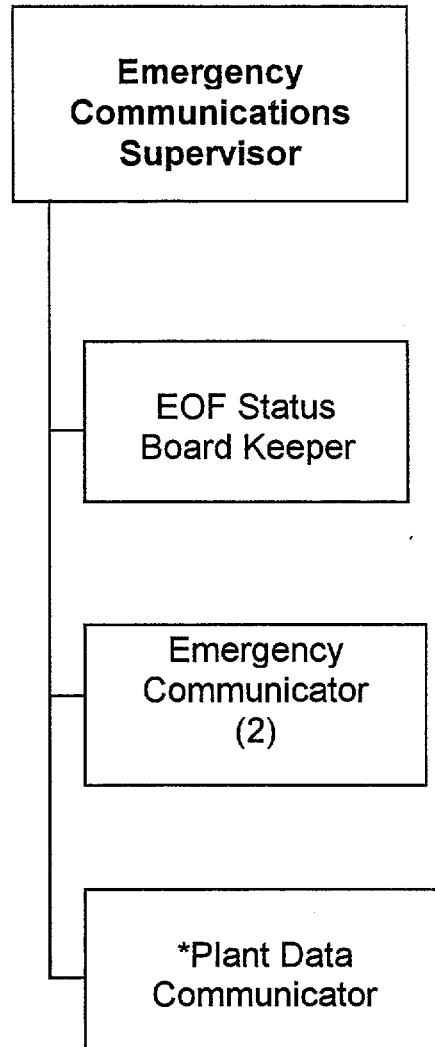
Figure B-1f: Onsite Emergency Radiation Protection Organization



\*\* Located in OSC

# PNPS EMERGENCY PLAN

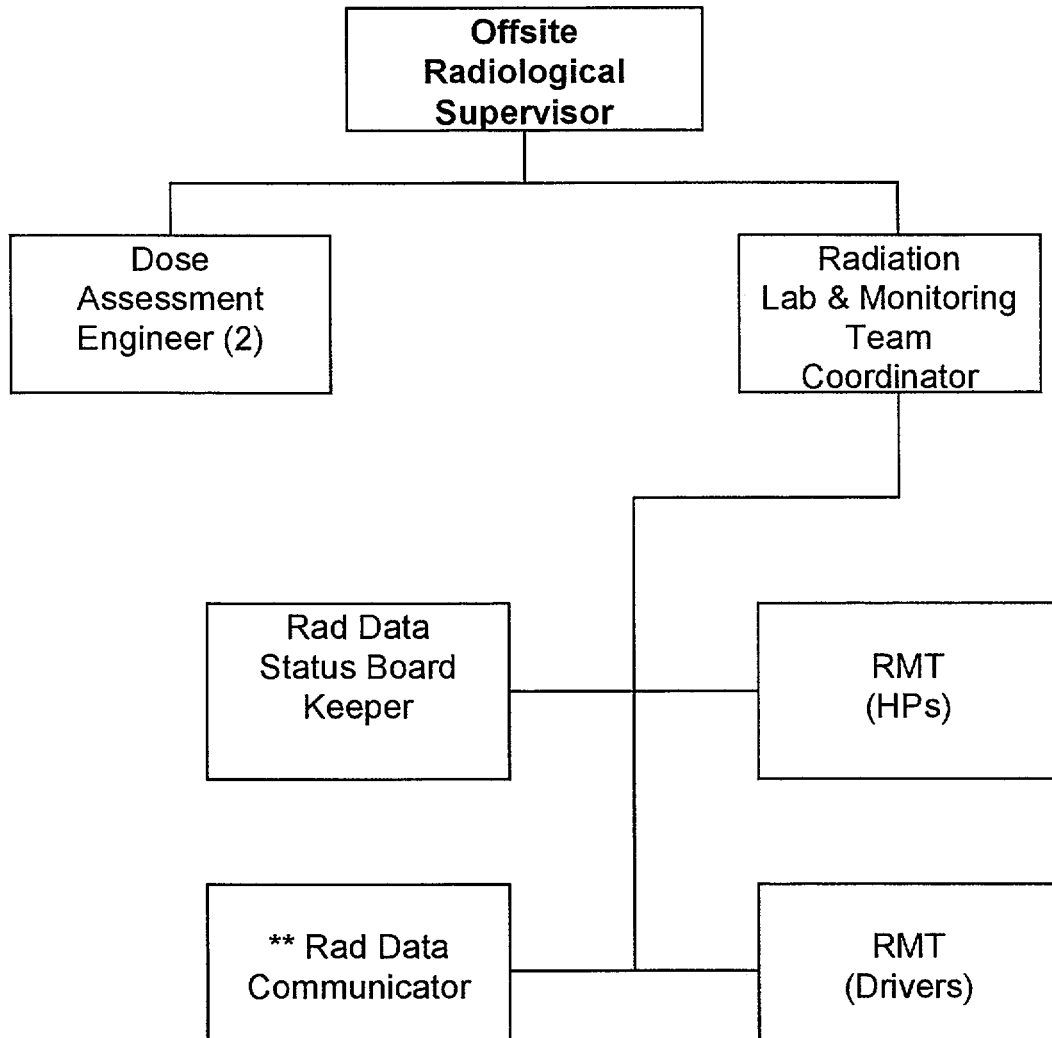
Figure B-1g: EOF Communications Organization



\* Required if SPDS is inoperable

# PNPS EMERGENCY PLAN

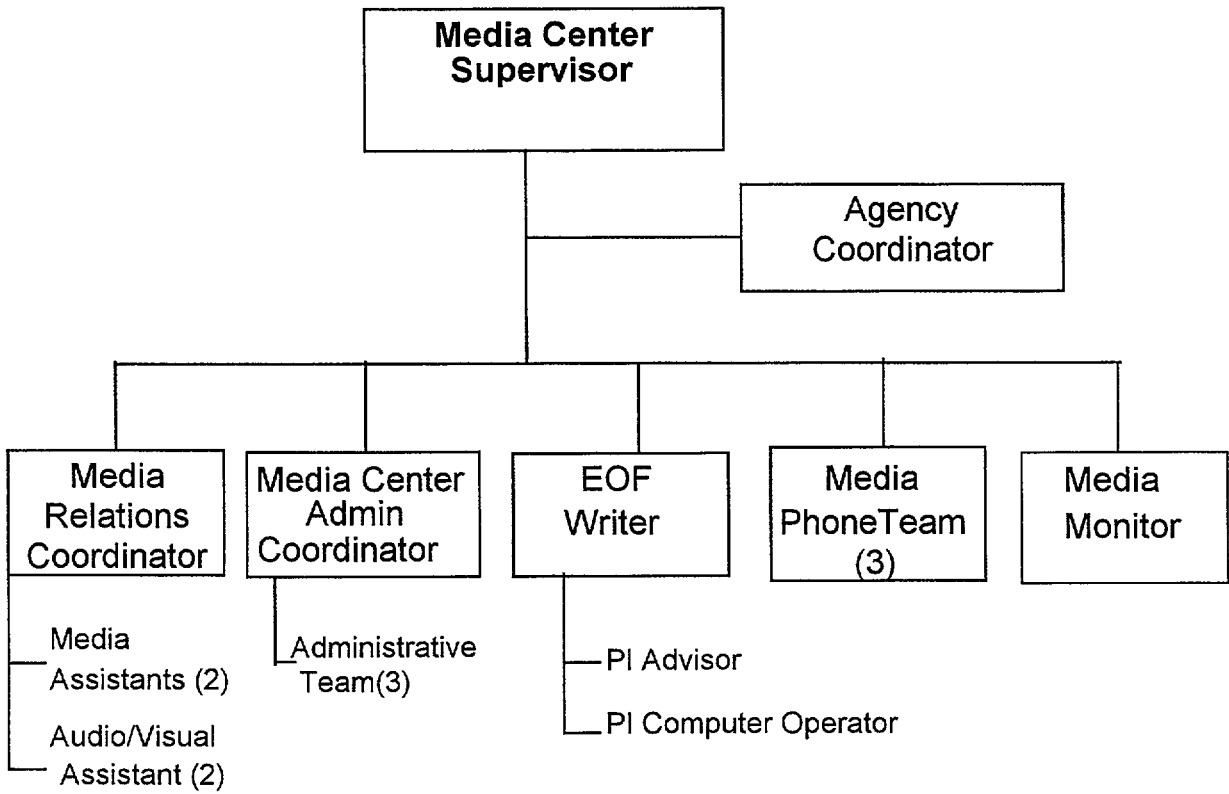
Figure B-1h: Offsite Radiological Assessment Organization



\*\* Needed only if SPDS inoperable

# PNPS EMERGENCY PLAN

Figure B-1i: Emergency P.I. Organization



# PNPS EMERGENCY PLAN

## **Section C: Emergency Response Support and Resources**

This section describes the provisions for requesting and effectively utilizing support resources and for accommodating Commonwealth and local staff at the PNPS Emergency Operations Facility (EOF).

1. **Federal Response Support and Resources:** Assistance is available from Federal agencies through the Federal Radiological Emergency Response Plan (FRERP). The primary Federal agencies who provide assistance to the Commonwealth and PNPS, respectively, are the Federal Emergency Management Agency (FEMA) and the Nuclear Regulatory Commission (NRC). Other Federal agencies, through FRERP, provide assistance to the Commonwealth in an emergency.
  - a. Sections A and B of this Plan identify the specific persons by title who are authorized to request Federal assistance.
  - b. Federal agencies that may provide assistance in direct support of Pilgrim Nuclear Power Station (PNPS) in the event of an accident are identified in Section A of this plan. If needed, Federal resources are made available to PNPS in an expeditious and timely manner.
  - c. Each PNPS emergency response facility has the equipment and communications capability necessary for a continuous high level of response, interaction and communication among key personnel during emergency conditions. The Technical Support Center (TSC) is able to accommodate seven NRC representatives. Working areas are available and a desk has been provided for their use. The EOF has space to accommodate twelve NRC representatives as well as representatives from FEMA, the Massachusetts Department of Public Health (MDPH) and the Massachusetts Emergency Management Agency (MEMA).

In addition to PNPS facilities and equipment, Commonwealth and local facilities and equipment are available to support the Federal response. Among these are the Commonwealth Emergency Operations Centers (EOCs) in Framingham and Bridgewater and local EOCs in Plymouth, Duxbury, Carver, Kingston and Marshfield, and Reception Centers in Taunton, Bridgewater and Braintree.
2. **Liaisons:**
  - a. The NRC, FEMA, MEMA, and MDPH may dispatch representatives to the EOF where accommodations have been provided.
  - b. At the Alert level and above, PNPS liaisons are dispatched to the Commonwealth and local government EOCs to act as communications liaisons and to provide clarification of emergency response information.
3. **Radiological Laboratories:** Outside analytical assistance may be requested from Commonwealth and Federal agencies and other utilities if the offsite radiological monitoring and environmental sampling operation exceeds the capacity of the PNPS capabilities.

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PNPS maintains access to additional laboratory facilities through agreements with the Duke Engineering & Services and the DOE Brookhaven Area office. A description of their general capabilities is provided in Section H of this Plan. It is estimated that these laboratories are able to respond within eight hours of initial notification.

4. Other Assistance: Contracted services, as listed in the Emergency Telephone Directory (ETD), are available and may be used in support of an emergency response at PNPS. Though not a typical contracted service, the Institute of Nuclear Power Operation (INPO) is able to provide:

- Assistance in locating sources of emergency manpower and equipment,
- An organization of industry experts who could advise the utility on technical matters, and
- Analysis of operational aspects of the incident.

Through INPO, nuclear utilities have identified technical experts and specialized equipment that could be provided upon request in an emergency. The INPO Emergency Resources Manual includes the information necessary to locate and request specialized equipment and technical assistance in the event of a nuclear emergency at PNPS. INPO member utilities and suppliers agree to provide assistance as outlined in the INPO Emergency Resources Manual.

PNPS utilizes the support services of the Centralized Emergency Planning Group, which is a functional group of Duke Engineering & Services that provides planning support to the PNPS Emergency Program. All work done by CEPG personnel is done under the direction of PNPS Emergency Preparedness personnel. The following are examples, where CEPG is utilized to support the program(s):

- Support Pilgrim's review and revisions to emergency plans and procedures.
- Assist in the development and conduct of drills and exercises.
- Support the emergency preparedness training programs(s).
- Assist in the administration of PNPS Emergency Preparedness Program(s).
- Interfaces with governmental agencies to facilitate the planning efforts on behalf of Pilgrim's Emergency Preparedness Program(s).
- Support planning for and implementation of the Alternate Media Center.

# PNPS EMERGENCY PLAN

## Section D: Emergency Classification System

This section describes the classification and emergency action level scheme used to determine the minimum response to an abnormal event at the Station. This scheme is based on Pilgrim Nuclear Power Station (PNPS) systems, effluent parameters and operating procedures. The initial response of Federal, Commonwealth and local agencies is dependent upon information provided by PNPS. PNPS works closely with the Commonwealth and local agencies to ensure consistency in classification schemes and procedural interfaces.

1. Emergency Classification: This Plan provides for four classifications of emergency conditions. These mutually exclusive classifications cover the postulated spectrum of potential and actual emergencies. Each classification is associated with a particular set of immediate actions. Each classification is characterized by certain initiating symptoms or events called Emergency Action Levels (EALs). These action levels include specific sets of plant parameters (i.e., instrument indications, system status, etc.) that are used to determine the appropriate emergency classification. Table D-1 outlines abnormal symptoms and events which would require declaration of an emergency at PNPS. The Emergency Plan Implementing Procedure used for classification of an event includes specific instrument readings and equipment status for establishing the symptoms and events appropriate for each classification. A conservative philosophy for classification is used to declare the highest emergency classification for which an EAL has been exceeded. The four classification levels are:

- a. Unusual Event - Event(s) are in progress or have occurred which indicate a potential degradation of the level of safety of PNPS. No release of radioactive material requiring offsite response or monitoring is expected.

This is the least severe of the four (4) levels. The purpose of this classification is to bring the PNPS staff and offsite agencies to a state of readiness in the event the situation degrades.

Required actions at this classification include:

- Notification, within 15 minutes, of the Commonwealth of Massachusetts and local communities.
- Assessment of the situation and response as necessary which may include escalating to a higher classification if conditions warrant.
- Notification of certain members PNPS Emergency Response Organization to standby (portions of the organization may be activated at this classification).
- Notification of the Nuclear Regulatory Commission (NRC) as soon as possible, but within 60 minutes of classification.
- When the event is terminated, close-out is performed over communication links followed by transmission of an Initial Notification Form indicating that the event has been terminated.

## PNPS EMERGENCY PLAN

- b. Alert - Event(s) are in progress or have occurred which indicate an actual degradation of the level of safety of PNPS. No releases of radioactive material requiring offsite response or monitoring are expected. The purpose of this classification is to ensure emergency personnel are readily available to respond, if the situation becomes more serious, and relieve the Control Room of some required actions so that the operations shift can concentrate on restoring the level of safety to the plant.

Required actions at this classification include:

- Notification, within 15 minutes, of the Commonwealth of Massachusetts and local communities.
  - Assessment of the situation and response as necessary which may include escalating to a higher classification if conditions warrant.
  - Activation of the PNPS Emergency Response Organization which includes activation of the Technical Support Center (TSC), Operations Support Center (OSC), Emergency Operations Facility (EOF), Media Center (MC), and notification of the Corporate Emergency Center (CEC).
  - Notification of the NRC as soon as possible, but within 60 minutes of declaration.
  - Keeping offsite authorities informed of plant status by providing one hour updates to include meteorological data and projected or actual doses for any releases which have occurred.
  - When the event is terminated, close-out is performed over communication links followed by an Initial Incident Report to offsite authorities participating in the response (i.e., NRC, State, Local) within 8 hours.
- c. Site Area Emergency - Event(s) are in progress with actual or likely major failures of plant systems needed to protect the general public. Any releases are not expected to exceed Environmental Protection Agency Protective Action Guideline exposure levels except near the site boundary. The Site Area Emergency class also includes events where a significant release of radioactive material is likely or is occurring but significant core degradation is not indicated based on current information.

The purpose of this classification is to ensure that all emergency response centers are manned, offsite monitoring teams are sent to staging areas or dispatched, personnel required to evacuate near-site areas are in position and provisions are made for information updates to the public through offsite authorities and the news media.

Required actions at this classification include:

- Notification, within 15 minutes, of the Commonwealth of Massachusetts and local communities.
- Assessment of the situation and response as necessary, this includes escalating to a higher classification if conditions warrant.



## PNPS EMERGENCY PLAN

- Activation of the PNPS Emergency Response Organization which includes activation of the TSC, OSC, EOF, Media Center and Corporate Emergency Response Group. Radiation Monitoring Teams are sent to staging areas or dispatched to monitor for releases of radiation to the environment.
  - Notification of the NRC as soon as possible, but within 60 minutes of declaration. The emergency organization has personnel available to consult with the NRC on planned actions at PNPS.
  - Keeping offsite authorities informed of plant status by providing one hour updates to include meteorological data and projected or actual doses for any releases which have occurred.
  - When the event is terminated, close-out is performed over communication links followed by an Initial Incident Report to offsite authorities participating in response (i.e., NRC, State and Local) within 8 hours.
- d. General Emergency - Event(s) are in progress or have occurred which involve actual or imminent core damage and the potential for a large release of radioactive material. Releases can be reasonably expected to exceed EPA PAG exposure levels offsite for more than the immediate site area. This is the most severe classification of an emergency. The purpose of this classification is to initiate predetermined protective actions for the public, provide continuous assessment of information from monitoring groups and provide information updates to the public through offsite authorities and the news media.

Required actions at this classification include:

- Notification, within 15 minutes, of the Commonwealth of Massachusetts and local communities.
- Assessment of the situation and response as necessary.
- Activation of the PNPS Emergency Response Organization which includes activation of the TSC, OSC, EOF, Media Center and Corporate Emergency Response Group. Radiation Monitoring Teams are sent to staging areas or dispatched to monitor for releases of radiation to the environment.
- Notification of the NRC as soon as possible, but within 60 minutes of declaration. The emergency organization has personnel available to consult with the NRC on planned actions at the Station.
- Keeping offsite authorities informed of plant status by providing one hour updates to include meteorological data and projected or actual doses for any releases which have occurred.
- Making, as a minimum, based upon plant conditions, initial protective action recommendations of evacuation of the 2 mile ring and to about 5 miles downwind of PNPS and sheltering of all other areas within the EPZ.
- Consideration of relocating the Media Center to its alternate site, based upon radiological or other conditions, such as a Commonwealth-directed evacuation of subarea 7.

## PNPS EMERGENCY PLAN

- Reassessment of PARs as necessary.
  - When the event is terminated, close-out is performed over communication links followed by an Initial Incident Report to offsite authorities participating in response (i.e., NRC, State, local) within 8 hours.
2. Emergency Action Levels: The symptoms and events outlined in Table D-1 encompass the example conditions from Appendix 1 of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness at Nuclear Power Plants" as well as the conditions indicative of postulated accidents from the Station's Final Safety Analysis Report (FSAR). The specific Emergency Action Levels detailed in the Implementing Procedures are utilized to classify emergency conditions and provide the control room operator with the indications characteristic of one or more of the symptoms or events specified.
  3. Offsite Classification Systems: PNPS works with the Commonwealth of Massachusetts and local authorities to ensure consistency between classification schemes. The content of the Emergency Action Levels is reviewed with the Commonwealth and local authorities on an annual basis.
  4. Offsite Emergency Procedures: PNPS works with the Commonwealth of Massachusetts and local authorities to ensure that procedures are in place that provide for emergency actions to be taken which are consistent with the protective actions recommended by PNPS accounting for local offsite conditions that exist at the time of the emergency.

Table D-1. Symptoms and Events Requiring Emergency Classification

SYMPTOM/EVENT CATEGORY	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
<b>1.0 REACTOR FUEL</b>				
1.1 Coolant Activity	Coolant activity indicating core melt		Coolant activity > 10 times technical specification limit	Coolant activity > technical specification limit
1.2 Off-gas Activity			Off-gas activity > 10 times technical specification limit	Off-gas activity > technical specification limit requiring shutdown
1.3 Thermal Limits				M CPR < Tech. Spec. Fuel Clad Integrity Safety Limit
1.4 Radiation Monitors	Containment radiation levels indicating core melt	Containment radiation levels indicating fuel failure	Radiation monitors indicating a fuel handling accident	
<b>2.0 REACTOR PRESSURE VESSEL</b>				
2.1 Reactor Water Level	Sustained RPV water level < Minimum Zero-Injection RPV Water Level  Inability to assure adequate core cooling via injection into the RPV	RPV water level cannot be maintained > Top of Active Fuel (TAF)	Inability to determine RPV water level	RPV water level cannot be restored and maintained > Low Level Scram Setpoint
2.2 Reactor Pressure			Reactor pressure above the safety limit	Loss of reactor pressure control functions
2.3 Reactor Power	Failure to SCRAM with excessive heat addition to containment	Initiation of alternate shutdown capabilities (boron)	Failure of the reactor to shutdown following a SCRAM signal	
<b>3.0 PRIMARY CONTAINMENT</b>				
3.1 Drywell Temperature		Inability to maintain drywell temperature < design temperature as determined by the Procedure.		Bulk drywell temperature cannot be maintained < normal maximum operating value
3.2 Torus Water Temperature		Inability to maintain sufficient torus water heat capacity		Torus water temperature above that requiring reactor scram
3.3 Containment Water Level	Primary containment water level cannot be maintained < 77 ft.	Inability to maintain containment water level within limits beyond which threaten the pressure suppression function of the containment  Torus water level cannot be maintained > 90 in.	Torus water level cannot be maintained < 180 in.	Drywell leakage > technical specification limit  Inability to maintain torus water level within technical specification limits
3.4 Primary Containment Pressure	Inability to maintain containment pressure below that which threatens containment structural integrity (prior to initiation of containment venting).	Torus bottom pressure cannot be maintained below the "Pressure Suppression Pressure" (PSP) (except during testing such as ILRT, etc.)	Inability to maintain containment pressure below the scram setpoint	

Table Symptoms and Events Requiring Emergency Classification

SYMPTOM/EVENT CATEGORY	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
3.5 Primary Containment H <sub>2</sub> and O <sub>2</sub> Concentrations	Drywell or torus H <sub>2</sub> and O <sub>2</sub> concentrations above deflagrable levels or inability to determine they are below these levels	Significant drywell or torus hydrogen and oxygen concentrations	Significant drywell or torus hydrogen concentration	
<b>4.0 SECONDARY CONTAINMENT</b>				
4.1 Secondary Containment Water Level		Excessive secondary containment area water levels caused by a primary system discharging into the area		Excessive secondary containment area water levels
4.2 Secondary Containment Temperatures		Excessive secondary containment area temperatures caused by a primary system discharging into the area		Excessive secondary containment area temperatures
4.3 Secondary Containment Radiation Levels		Excessive secondary containment area radiation levels caused by a primary system discharging into the area	General area radiation levels which increase dramatically due to airborne radioactivity	
<b>5.0 RADIOACTIVITY RELEASE</b>				
5.1 Effluent Monitors	Main stack effluent monitor readings corresponding to lower level PAGs projected at the site boundary or beyond	Main stack effluent monitor readings corresponding to 100 mrem w.b. or 500 mrem thyroid projected at the site boundary or beyond	Gaseous effluent monitor readings indicative of a significant degradation of radioactivity containment systems	Gaseous or liquid effluent monitor readings indicating releases approaching technical specifications
5.2 Dose Projection and Environmental Measurements	Dose projection or environmental measurements which indicate doses in excess of lower level PAGs at the site boundary or beyond  Dose projection or environmental measurements which indicate dose rates in excess of 1 rem/hr w.b. or 5 rem/hr thyroid at the site boundary or beyond	Dose projection or environmental measurements which indicate doses in excess of 100 mrem w.b. or 500 mrem thyroid at the site boundary or beyond		
5.3 Contaminated Injury				Transportation of a contaminated injured person to an offsite medical facility.
<b>6.0 INTERNAL EVENTS</b>				
6.1 Technical Specifications				A required Technical Specification Shutdown is not completed within allowed LCO Action Statement Time.

Table 1. Symptoms and Events Requiring Emergency Classification

SYMPTOM/EVENT CATEGORY	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
6.2 Safety System Failures		Evacuation of control room without establishing control within 15 minutes from remote shutdown stations  Steam line break outside primary containment without isolation  Inability to immediately isolate any main steam line following a valid isolation signal	Loss of control room habitability  Inability to establish cold shutdown conditions	Failure of a SRV to close following reduction of applicable pressure
6.3 Electrical System Failures		Sustained loss of all AC power capability  Sustained loss of all 125 VDC power capability	Loss of all AC power capability  Loss of all 125 VDC power capability	Loss of all vital onsite AC power capability  Loss of all vital offsite AC power capability
6.4 Loss of Indication, Alarm or Communication Capability			Complete loss of Plant Process Computer <u>and</u> Loss of most or all Control Room Annunciators <u>and</u> Reactor coolant temperature is > 212 deg. F.	Loss of indication or alarms which cause a significant loss of assessment capability  Loss of ability to communicate with or adequately activate the PNPS Emergency Response Organization

**7.0 EXTERNAL EVENTS**

7.1 Security Threats	Security compromise which has lead to loss of physical control of the plant	Security compromise which may lead to the loss of physical control of the plant	Any ongoing security compromise	Attempted unauthorized entry into the Protected Area  Indication of attempted sabotage  Receipt of a credible bomb threat
7.2 Fire		Fire affecting the ability of two or more safety systems to perform their intended function and posing a significant potential for release of radioactivity	Fire burning out of control in a plant vital area	Fire within the Protected Area lasting >10 minutes from the time Fire Brigade fire fighting efforts begin or fire requiring offsite fire fighting assistance
7.3 Man-made Events		Any of the following which has affected the ability of two or more safety systems to perform their intended function and posing a significant potential for release of radioactivity: Aircraft Crash, Explosion, Toxic or Flammable Gas Release	Any of the following occurring which affect plant operation: Aircraft Crash, Explosion, Toxic or Flammable Gas Release	Any of the following events occurring onsite: Aircraft Crash, Explosion, Toxic or Flammable Gas Release

Table 1. Symptoms and Events Requiring Emergency Classification

SYMPTOM/EVENT CATEGORY	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
7.4 Natural Events		Any natural phenomena which has affected the ability of two or more safety systems to perform their intended function and posing a significant potential for release of radioactivity  Any earthquake > SSE	Any natural event which causes observed damage to permanent plant structures or equipment affecting plant operation  Any earthquake > OBE	Sustained hurricane force winds  Report of a tornado onsite  Any earthquake detected by station seismic instruments and Ground motion is felt by one or more plant operations personnel.
<b>8.0 OTHER</b>				
	In the opinion of the Ops Shift Supt. or Emergency Director events are in progress which indicate actual or imminent core damage and the potential for a large release of radioactive material outside the site boundary	In the opinion of the Ops Shift Supt. or Emergency Director events are in progress or have occurred which indicate actual or likely failures of plant systems needed to protect the public and pose a significant radioactivity release potential	Any event which in the opinion of the Operations Shift Supt. or Emergency Director could or has caused actual substantial degradation of the level of safety of the plant	Any event which in the opinion of the Ops Shift Supt. or Emergency Director could or has lead to a potential degradation of the level of safety of the plant  Any event which in the opinion of the Operations Shift Supt. or the Emergency Director warrants the prompt notification of state and local authorities and precautionary notification of Emergency Response Organization personnel

# PNPS EMERGENCY PLAN

## **Section E: Notification Methods and Procedures**

This section describes the notification of Commonwealth and local response organizations and PNPS emergency response personnel. It outlines the content of initial and follow-up messages to response organizations within the Pilgrim Nuclear Power Station (PNPS) Plume Exposure Pathway Emergency Planning Zone (EPZ).

1. **Response Organization Notification:** PNPS, in cooperation with Commonwealth and local authorities, has established mutually agreeable methods for notification of response organizations consistent with the emergency classification and action level scheme.

When an emergency is declared, reclassified, or terminated, the Emergency Director ensures notifications are promptly made to first-line offsite support agencies. These first-line notification contacts are:

- The Massachusetts State Police Middleboro Barracks and the Massachusetts Emergency Management Agency (MEMA), notified by ring-down phone and facsimile machines, or alternatively with BECONS or commercial telephone as backups. The Massachusetts Emergency Management Agency (MEMA) notifies the Massachusetts Department of Public Health (MDPH), MEMA Area II and Braintree using commercial telephone lines.
  - The local communities within the Plume Exposure EPZ and reception communities are notified by ring-down phone and facsimile machines, with BECONS or commercial telephone as backups. These communities are Plymouth, Carver, Duxbury, Kingston, Marshfield, Bridgewater and Taunton.
  - The Nuclear Regulatory Commission (NRC) is notified by a dedicated telephone system called the Emergency Notification System (ENS), or for backup, by commercial telephone. Initial notification occurs from the Control Room.
2. **Notification and Mobilization of Emergency Response Personnel:** At the Unusual Event classification, select portions of the PNPS Emergency Response Organization are notified and may be activated at the discretion of the Emergency Director. At the Alert, Site Area Emergency, or General Emergency classification level, activation of all Emergency Response Organization and related facilities is required.

Onsite personnel are notified of the declaration, escalation or termination of an emergency. An announcement is made from the Control Room over the plant public address system and includes the emergency classification declared and response actions to be taken by site personnel. In addition to the public address system, emergency organization personnel are notified by pagers or phone calls from the Computerized Automated Notification System (CANS). Backup systems to CANS include manual activation of the pagers and individual telephone calls made by security personnel using the PNPS Emergency Telephone Directory.

3. **Initial Notification:** The initial emergency message form includes information about:
  - authenticity, i.e. "This is a Drill" or "This is an Actual Event."
  - identity of caller and receiver of call

## PNPS EMERGENCY PLAN

- emergency classification
- emergency action level identification and whether a release is in progress
- wind direction and speed
- whether protective measures may be necessary
- the date and time of classification and notification

Initial notifications are delivered to the Commonwealth and local communities within fifteen (15) minutes of classification of an event. In a General Emergency the notification includes, at a minimum, a recommendation for evacuation of the general public within the two (2) mile ring of PNPS and five (5) miles downwind. All other areas within the EPZ are sheltered.

4. Follow-up Messages: The Emergency Director ensures communications are maintained with the offsite authorities through periodic follow-up messages. The follow-up messages include the following, as appropriate:
  - a. Location of incident and name of caller and receiver of call, whether a drill or not a drill.
  - b. Time and date of the incident.
  - c. Class of emergency.
  - d. Type of actual or potential radiological release (airborne, waterborne, surface spill).
  - e. Whether or not [estimate of quantity of] radioactive material has been released or is being released and the points and heights of releases.
  - f. Radiological release information, including estimates of the relative quantities and concentrations of noble gases, halogens, and particulates.
  - g. Meteorological conditions at appropriate levels (wind speed, direction to and from, stability, precipitation).
  - h. Actual or projected dose rates at the site boundary, projected integrated dose at site boundary.
  - i. Projected dose rates and integrated dose at the projected peak and at 2, 5, and 10 miles, including subarea(s) affected.
  - j. Estimate of any surface contamination in-plant, onsite, or offsite.
  - k. Plant emergency response actions underway.
  - l. Recommended emergency actions, including protective measures.
  - m. Request for any needed onsite support by offsite organizations.
  - n. Prognosis for worsening or termination of event based on plant information.



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5. Commonwealth and Local Information Dissemination: Commonwealth and local government organizations, in cooperation with PNPS, have established a system for disseminating appropriate information to the public. The system includes notification through appropriate broadcast media, e.g. the Emergency Alert System (EAS).
6. Notification of the Public: The Towns of Plymouth, Carver, Kingston, Duxbury and Marshfield have the capability for providing an alert signal to their population within fifteen (15) minutes following the decision to notify the public.

PNPS, in cooperation with the Commonwealth of Massachusetts and local agencies, has developed the Prompt Alert and Notification System (PANS). PANS is the primary method of notifying the public. This system consists of one hundred and twelve (112) large scale electronic sirens and four (4) primary radio stations covering the Plume Exposure Pathway EPZ. The sirens alert the public to tune their radios to pre-designated EAS stations to receive instructional messages. The EAS includes the following radio stations:

- WBMX (FM) 98.5 Boston
- WPLM (FM) 99.1 Plymouth
- WPLM (AM) 1390 Plymouth
- WATD (FM) 95.9 Marshfield

Pre-scripted messages are broadcast by the EAS network along with any protective actions directed by the Governor of Massachusetts from recommendations made by the Massachusetts Department of Public Health and the Massachusetts Emergency Management Agency. The Massachusetts Emergency Management Agency will select and initiate broadcast of appropriate EAS messages for the EPZ Towns.

The siren system is equipped with public address capability. This capability is utilized for early notification to the beach and resident population of the Saquish/Gurnet area. It may also be utilized by any of the towns at any time.

As a backup means of public notification, route alert teams, using public address systems, drive through areas where a siren failure has been indicated and broadcast an alert message which instructs the public to tune to an EAS station. Maps and instructions have been developed for each siren coverage area.

Severely hearing-impaired residents are called by the Town Emergency Response Organization using Teletypewriter (TTY) equipment.

Schools, major employers with 50 employees or more, transient shelters, health care facilities, and recreation areas are notified by tone alert radios activated by the EAS tone.

The public and commercial boating population receive notification from the Harbor Master and U. S. Coast Guard boats equipped with public address systems. Additional notification is also completed by marine and citizen band (CB) radios to those boats that are radio equipped.

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Beach and pond visitors are notified by personnel from the Police Department or Public Works Department driving public address system equipped vehicles.

7. Messages to the Public: The Commonwealth has developed draft messages for the EAS that are intended for the public. These draft messages are included as part of the Commonwealth plan and contain instructions with regard to specific protective actions to be taken by occupants and visitors of affected areas such as: take shelter and go indoors, close windows and doors, turn off ventilation systems; directions given for evacuation; directions to stay tuned to specific stations for further information and instructions, ad hoc respiratory protection (e.g. handkerchief over mouth), etc. The distribution of radioprotective drugs to the general public is not authorized by the Commonwealth of Massachusetts. PNPS also provides supporting information for messages through the MEMA.

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## **Section F: Emergency Communications**

This section describes the emergency communications equipment available to support the Pilgrim Nuclear Power Station (PNPS) Emergency Response Organization. It outlines the available communications equipment to:

- Notify the PNPS Emergency Response Organization.
- Provide Initial Notification to Offsite governmental agencies.
- Communicate among the PNPS Emergency Response Facilities.
- Communicate with the Nuclear Regulatory Commission (NRC) and other Federal, Commonwealth, and local response agencies.
- Communicate with hospitals, ambulances, and other agencies providing offsite assistance to PNPS.

This section further outlines the program for insuring that the communications equipment is tested on a regular schedule, and that methods are in place to ensure rapid and reliable repair of any equipment found not operational.

1. **Communications/Notifications:** Pilgrim Nuclear Power Station maintains the capability to make initial notifications to both the PNPS Emergency Response Organization and designated offsite agencies on a 24-hour per day basis. Figure F-1 depicts the Initial Notification paths and the organizational titles from PNPS to local and Commonwealth emergency response organizations. Those links that are manned 24-hours per day are indicated on Figure F-1. Table F-1 depicts the primary and alternate method of communicating between various PNPS facilities, with offsite facilities, and with the Commonwealth of Massachusetts. Table F-1 also depicts the provisions for communications with Commonwealth and utility radiological monitoring teams. Table F-2 shows available communications equipment within each of the PNPS emergency response facilities.

PNPS maintains a Computerized Automated Notification System (CANS) to rapidly notify members of the PNPS Emergency Response Organization. CANS consists of a micro-computer supporting modem equipment which is capable of initiating and receiving telephone calls. When CANS receives an incoming telephone call, it requests a security identification and then responds with a computerized voice message giving the caller emergency information. One of the calls made by CANS is to the BEEPS, a computerized, commercial quality paging system. BEEPS accepts paging instructions from CANS which activates personal pagers belonging to members of the PNPS Emergency Response Organization. Figure F-2 depicts the decision process CANS undergoes upon activation.

Should CANS and/or BEEPS fail, Emergency Preparedness Implementing Procedures (EP-IP) specify the course of action to be taken. These procedures require Security personnel to manually call-out key emergency response personnel if BEEPS fails.

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Dedicated telephone equipment, such as the Emergency Notification System (ENS), is in place in the Control Room (CR), Technical Support Center (TSC), and the Emergency Operations Facility (EOF). This allows direct communications to the NRC and other Federal emergency response organizations. The ENS is the primary notification system used for notification of the NRC. In addition to the ENS, administratively dedicated telephones serving as the Health Physics Network (HPN) are used in the Control Room, TSC, and EOF for the transmittal of radiological information to the NRC. It is under the Federal Radiological Emergency Response Plan (FRERP) that PNPS requests assistance from Federal agencies.

Additional arrangements have been made to allow for the establishment of NRC communications equipment at the EOF. This consists of space for external antennae, as well as space on the PNPS primary radio tower (Pine Hills) for an NRC transportable radio repeater.

- a. PNPS Radio Communications System: A comprehensive communications network with backup capabilities has been provided to assure reliable onsite and offsite communications between various emergency facilities and agencies as follows:
  - Pilgrim Alert Radio: This radio system, used on a daily basis, provides backup for communications among PNPS facilities. It is a backup notification method from the Station to Massachusetts State Police, Middleboro barracks.
  - PNPS Security Radio: This radio system is used at PNPS exclusively for security purposes, it also serves as a backup communications link between PNPS Emergency Response Facilities.
  - Massachusetts Emergency Management Agency (MEMA) Radio: This radio system is used during emergencies by MEMA for administrative and coordination purposes.
  - Nuclear Incident Assessment Team (NIAT) Radio: This repeater system is used by the Commonwealth to direct radiological teams from the EOF.
  - PNPS Radiological Monitoring Team Radio: This repeater radio frequency is used on a daily basis for the normal dispatch of PNPS personnel, and during emergencies for the exclusive use of the monitoring teams to communicate with the EOF.
  - BECONS: BECONS is a dedicated VHF high band radio repeater system. BECONS is used by PNPS as the backup notification method to the DNN. BECONS is also used for the transmittal of administrative information among offsite authorities and as the primary method of notification for siren activation.
  
- b. PNPS Telecommunications Systems: In addition to the above radio systems, the following phone systems are in place to support the emergency efforts:
  - PNPS Telephone System: A private telephone system connecting all PNPS offices. At PNPS and the EOF, portions of the telephone system are powered by uninterruptable power supply (UPS) and generator backup power.

## PNPS EMERGENCY PLAN

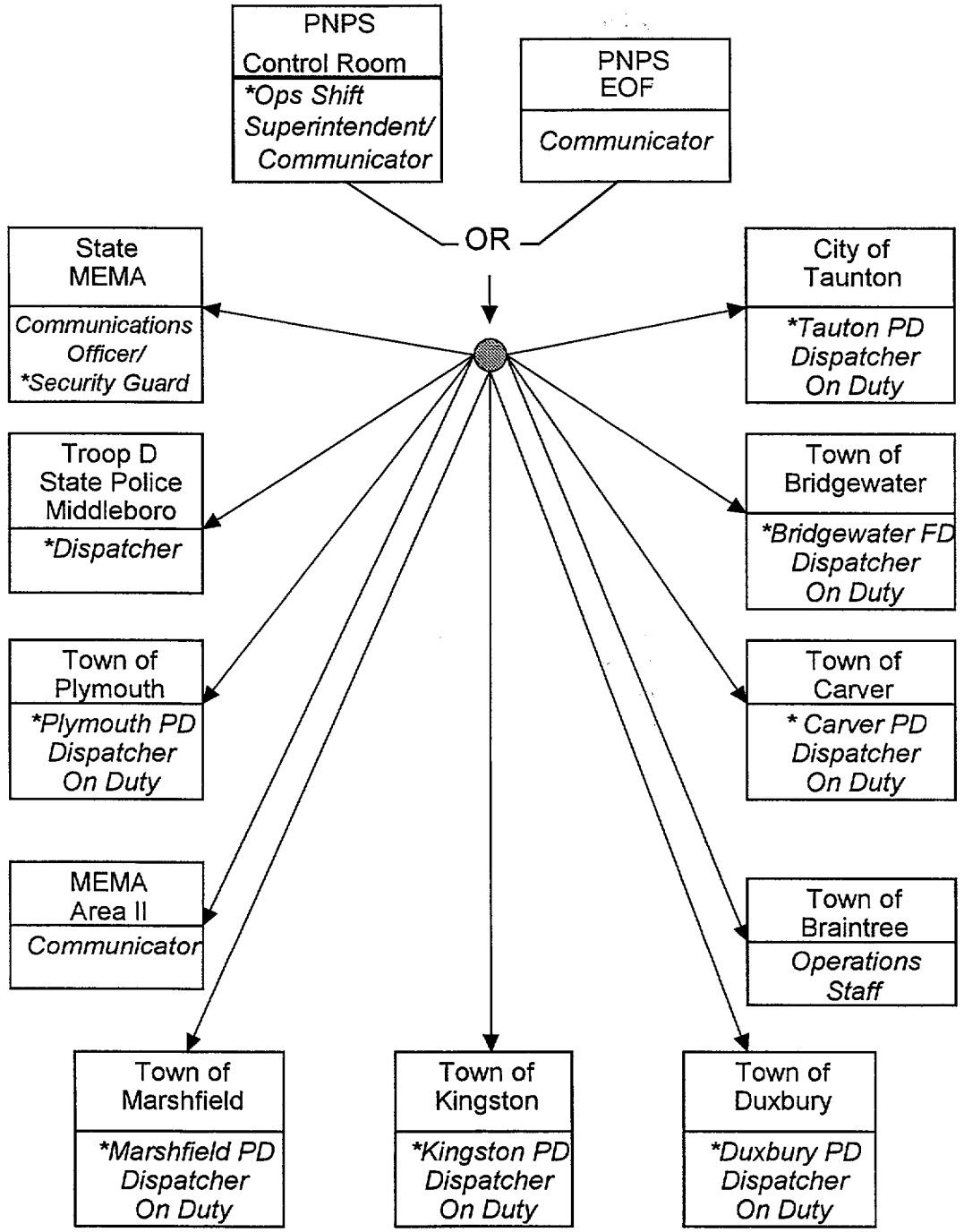
- Local Commercial Telephone System: This system provides standard commercial telephone service through the Bell Atlantic infra-structure, consisting of central offices and the wire line and microwave carrier.
  - Fixed Cellular Telephone: This system is provided in the Operations Shift Superintendent's office in the Control Room, the TSC, the OSC and the Primary Gate as a backup to the local commercial telephone system.
- c. Special Communication Links: Separate communications methods exist among the various emergency response facilities in order to insure reliable and timely exchange of information. These methods consist of the following:
- Digital Notification Network (DNN): The DNN is a private network ring down notification system and a facsimile network that provides a notification link from PNPS (Control Room and EOF) to each offsite agency. The DNN ringdown is the primary notification method from PNPS to the offsite authorities. A courtesy facsimile of the offsite notification form is broadcast simultaneously with the DNN Ringdown. Figure F-4 depicts the initial notification scheme. BECONS is the backup of the DNN.
  - Ring-down - Plymouth Police Department: A dedicated, automatic Ring-down telephone circuit between PNPS and the Plymouth Police Department, intended primarily to rapidly secure law enforcement assistance.
  - Ring-down - Plymouth Fire Department: A dedicated, automatic Ring-down telephone circuit between the Control Room and the Plymouth Fire Department intended to provide rapid fire fighting support.
  - EOF - Media Center: Designated telephone circuits between the EOF and the Media Center have been provided to ensure a rapid dissemination of information to Media representatives. Telecommunications equipment has been provided for each of the EPZ communities to contact the Media Center.
  - Plant Data Phone (PDP): An administratively dedicated telephone that provides conferencing capability among the Control Room, TSC, EOF and the Alternate EOF. The PDP is used to transmit Station data for status boards located in each of the emergency facilities.
  - Emergency Conference Line (ECL): An administratively dedicated telephone that provides conferencing capability among the Control Room, TSC, EOF, AEOF, and the primary conference room at PNPS for use by management personnel located in each of the facilities.
  - Health Physics Network (HPN): Federally provided telephone circuits used to provide communications to and from the NRC radiological section.
  - Emergency Notification System (ENS): Federally provided dedicated telephone circuits between the Control Room, the TSC, and the EOF to NRC facilities. ENS utilizes the Federal Telephone System (FTS) to provide reliable communication capabilities. The ENS is the primary notification method to the NRC. Additional FTS service is available in the TSC and EOF for use by Federal agency responders.

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- Facsimile Equipment: Facsimile equipment located in each of the onsite and offsite Station and governmental emergency response facilities for the transmission and receipt via wire line of information, texts, pictures or diagrams in hard copy form. This equipment is in addition to the facsimile equipment associated with the DNN.
  - PNPS Mitigation Line: An administratively dedicated telephone that provides conferencing capability among the Control Room, TSC, EOF and alternate EOF.
  - Onsite Gaitronics Page System: A public address system, separate from any telephone system, which consists of handset stations, loud speakers, and desk set units. The Gaitronics Page System provides five Station channels, one of which is dedicated to operations/emergency use only.
2. Medical Communications: PNPS establishes communications with the primary medical hospital, Jordan Hospital, and the backup hospital via commercial telephone which is accessed by Station personnel either via commercial onsite telephone or by a PNPS telephone. A direct, dedicated ring-down telephone into the Plymouth Fire Department (the ambulance Dispatcher) provides for a coordinated communications link to the ambulances responding to PNPS or transporting personnel from the Station. Figure F-3 depicts this coordinated communications link.
3. Communications Drills: Communications drills between PNPS and state and local governments are conducted in accordance with criteria contained in Section N.2. Also, at least monthly, PNPS personnel conduct a surveillance to determine the working condition and availability of each piece of communications equipment. This surveillance includes a check of the units operability and general condition. Deficiencies are identified and corrected. The PNPS Electronics Laboratory maintains a large number of spare units to rapidly replace non-operational equipment.

# PNPS EMERGENCY PLAN

Figure F-1: Initial Notification



\* Indicates 24-hour operation

PNPS To Each Offsite Agency

1. DNN (Digital Notification Network)
2. BECONS
3. Commercial Telephone

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Table F-1: Communications Matrix

## Communications Matrix

	Control Room	TSC	OSC	EOF	AEOF	Media Center	Corporate	Primary Gate
Control Room								
TSC	2,6,9,10,15,16,19,24,25,28							
OSC	2,4,6,7,9,25,28	9,28						
EOF	1,2,5,6,7,9,10,15,16,19,24,27	1,2,4,9,10,15,16,19,24,27	7,9,10					
AEOF	2,7,10,15,16,19,24	2,4,10,15,16,24	7,9,10	1,4,5,10,15,16,20,24				
Media Center	10,19	10,19	10	10,14,19	10			
Corporate	10,19	10,19	10	10,19	8,10	8,10		
Primary Gate	1,2,6,9,10,28	1,2,6,9,28	2,9,10,28	1,2,9,10,28	1,10,28	10	10	
EPZ Towns	5,10,12,13,19,27,28	10	10	5,10,19,20,22,27	5,10,19	10,19	10	10,12,13
Reception Center Towns	5,10,19,27,28	10	10	5,10,19,20,22,27	5,10,19	10,19	10	10
MEMA	1,5,10,11,19,27,28	10	10	3,5,10,11,19,20,22,26,27	5,10,19	10,19	10	10,11
Rhode Island	10	10	10	10,19	10,19	10,19	10	10
NRC	9,10,17,18,19,23,28	10,17,18,23	10,23	10,17,18,19,23	10,19	10,19	10	10
Jordan Hospital	10	10	10	10	10	10	10	10
RMTs	4,28	4,28	4,28	4,28	4,28			28

	EPZ Towns	Reception Ctr Towns	MEMA	Rhode Island	NRC	Jordan Hospital	RMTs
Control Room							
TSC							
OSC							
EOF							
AEOF							
Media Center							
Corporate							
Primary Gate							
EPZ Towns	5,10,20,22						
Reception Center Towns	5,10,20,22	5,10,20,22					
MEMA	5,10,19,20,22	5,10,19,20,22					
Rhode Island	10	10	10				
NRC	10	10	10	10			
Jordan Hospital	10,21	10,21	10,21	10	10		
RMTs						28	4,28

- |                        |                              |                                    |                                       |
|------------------------|------------------------------|------------------------------------|---------------------------------------|
| 1. Pilgrim Alert Radio | 8. BECo Telephone System     | 15. Plant Data Phone               | 22. Amateur Radio (440 MHz)           |
| 2. Security Radio      | 9. PNPS Telephone System     | 16. Emergency Conference Line      | 23. Federal Telecommunications System |
| 3. MEMA Radio          | 10. Local Telephone System   | 17. Health Physics Network         | 24. PNPS Mitigation Line              |
| 4. RMT Radio           | 11. Ringdown-State Police    | 18. Emergency Notification Network | 25. Operator Walkdown Radio           |
| 5. BECONS              | 12. Ringdown-Plymouth Police | 19. Facsimile Equipment            | 26. NIAT Radio                        |
| 6. Fire Brigade Radio  | 13. Ringdown-Plymouth Fire   | 20. Amateur Radio (2 Meter)        | 27. Digital Notification Network      |
| 7. Rad Data Phone      | 14. EOF-Media Center         | 21. Medical Radio                  | 28. Cellular Telephone                |

figf1.xls



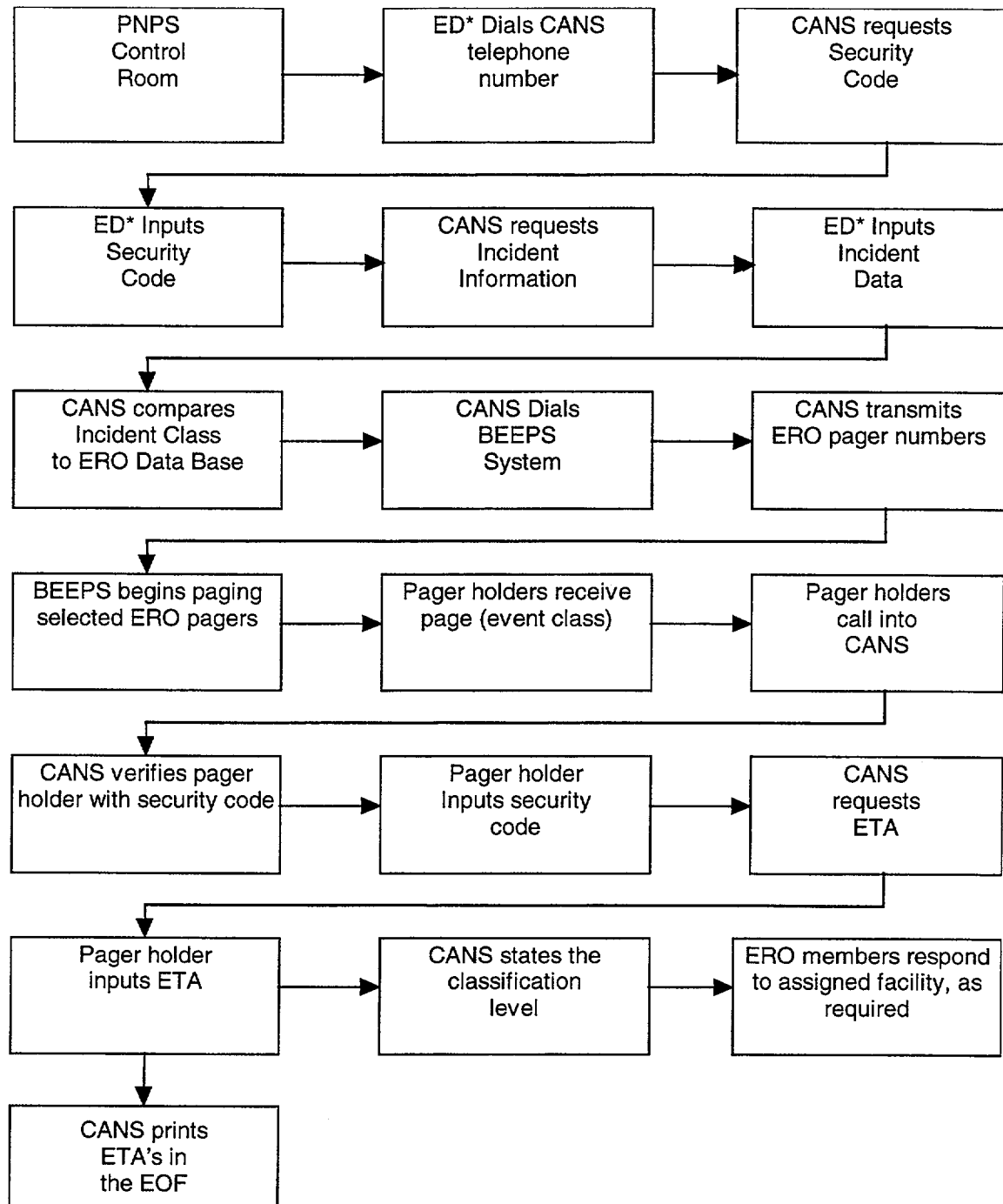
# PNPS EMERGENCY PLAN

Table F-2: Communications Equipment

		CONTROL RM	TSC/OSC	EOF	AEOF	PRIMARY GATE	MEDIA CTR	PRUDENTIAL
RADIOS	Pilgrim Alert Radio	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
	Security Radio	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
	MEMA Operational Radio			<input checked="" type="checkbox"/>				
	NIAT Radio			<input checked="" type="checkbox"/>				
	PNPS Rad. Monitoring Team Radio	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
	BECONS	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
	RACES Radio 2 Meter			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
	RACES Radio 440			<input checked="" type="checkbox"/>				
TELEPHONES	Prudential System							<input checked="" type="checkbox"/>
	PNPS System	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
	Cellular Telephone System	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
	Local Commercial Bell System	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Auto Ringdown Plymouth PD	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
	Auto Ringdown Plymouth Fire Department	<input checked="" type="checkbox"/>						
	Plant Data Phone (PDP)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
	Emergency Conference Line (ECL)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
	ENS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
	HPN	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
OTHER	Plant Page System	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
	Facsimile Equipment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Mitigation Line	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			

# PNPS EMERGENCY PLAN

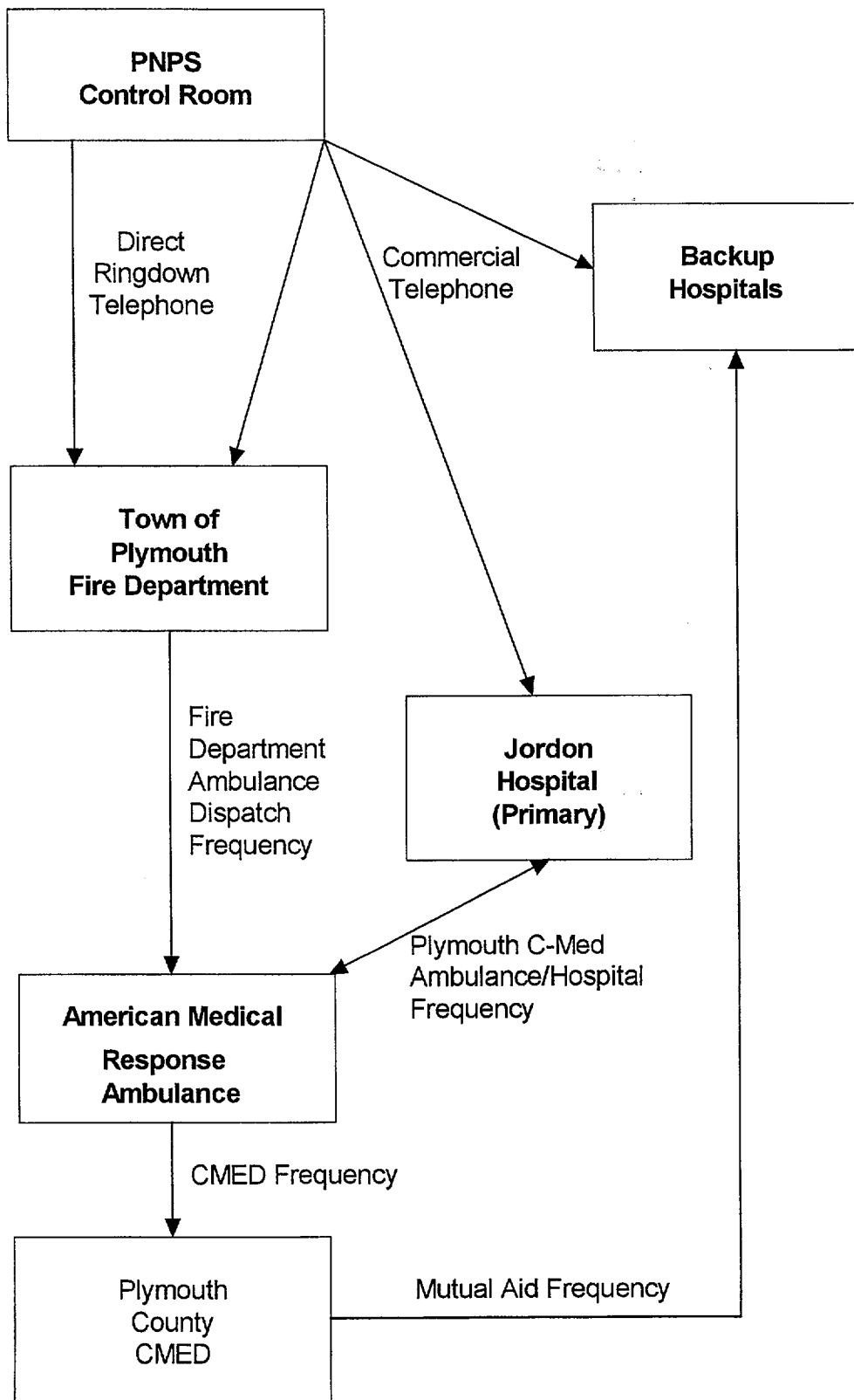
Figure F-2: CANS Activation Schematic



\*ED - Operations Shift Superintendent/Emergency Director or his designee

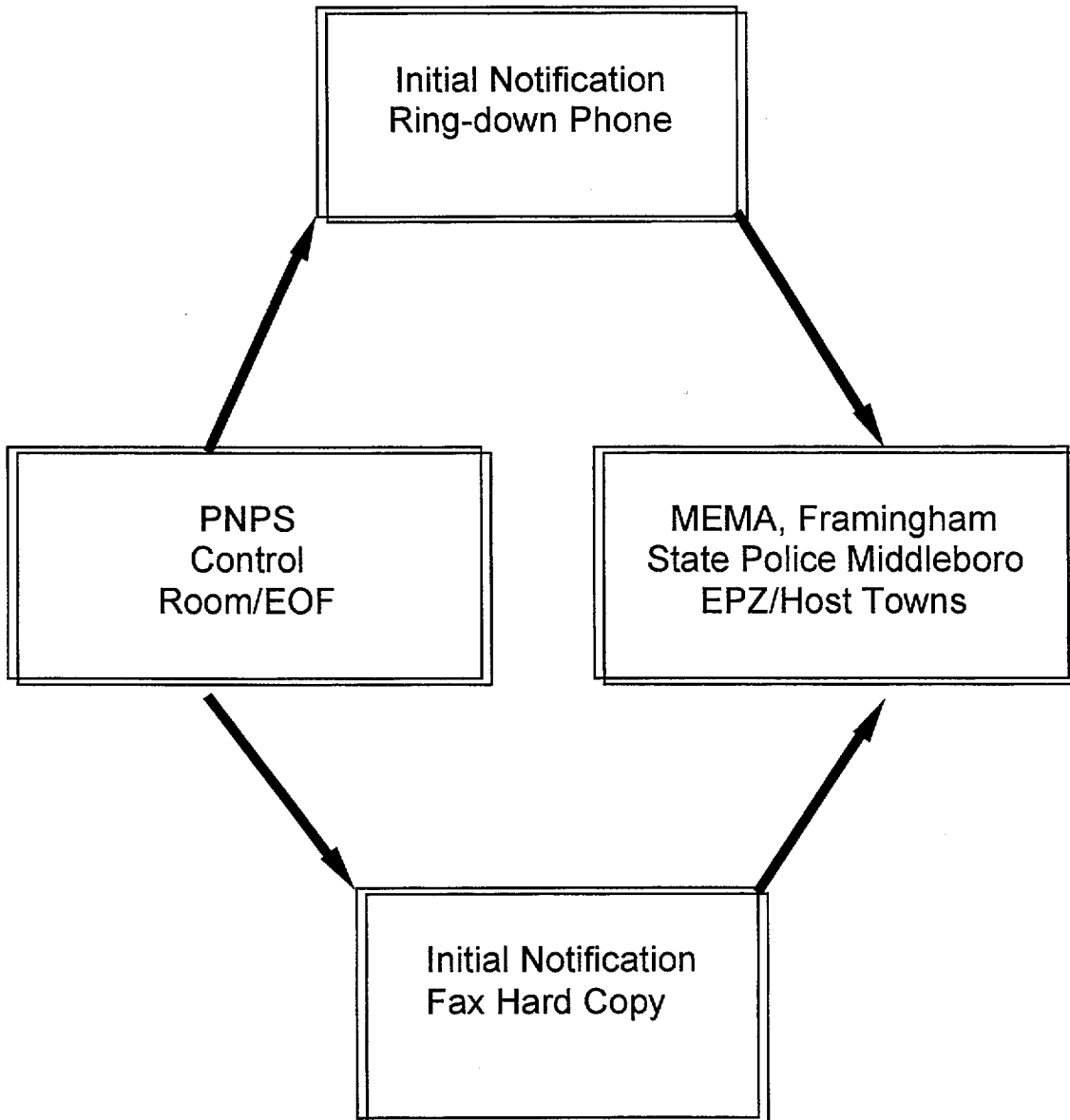
# PNPS EMERGENCY PLAN

Figure F-3: PNPS - Medical Communications



# PNPS EMERGENCY PLAN

Figure F-4: Initial Notification Scheme



# PNPS EMERGENCY PLAN

## **Section G: Public Education and Information**

This section describes the Pilgrim Nuclear Power Station (PNPS) public education and information program. It outlines the methods for distributing public information materials on an annual basis and describes how the public is informed in the event of an emergency.

1. **Public Information Publication:** The emergency public information publication for PNPS is an annual calendar which is developed in coordination with the Massachusetts Emergency Management Agency, the Massachusetts Department of Public Health (MDPH), and local communities. It is distributed by mail to all residents and businesses within the Plume Exposure Pathway Emergency Planning Zone (EPZ). The contents of the calendar include the following:
  - a. Educational information on radiation;
  - b. Commonwealth and EPZ community contacts for additional information;
  - c. Definitions of protective measures as well as written descriptions of evacuation routes, locations of reception centers, steps to follow when sheltering or evacuating;
  - d. Special needs of the handicapped, and
  - e. Relocation points for school children.
2. **Public Education Materials:** In addition to the emergency public information calendar, placards are posted throughout the EPZ communities. The placards provide information to visitors about what to do when the sirens sound, evacuation routes and where to obtain additional emergency information. Emergency information and instructions are also provided in local telephone directories.
3. **Media Center**
  - a. The Media Center, located at the Entergy Industrial Park Training Center in Plymouth, provides a location for the news media to receive information from all involved agencies and companies during an emergency and provide it to the general public. Work areas are set up for the news media and telephones are installed for their use. If, due to radiological or other conditions, the Media Center is found to be uninhabitable, it will be relocated to the Alternate Media Center at the offices of Duke Engineering & Services in Marlborough. Comparable facilities both for Media Center staff and media representatives are available at the alternate facility.
  - b. During an emergency, the Emergency Director may approve tours of the Emergency Operations Facility to a limited number of news media. Tours may take place at an Unusual Event or during the Recovery phase. Tours normally originate from the Media Center, when activated, and are coordinated by the Media Center Supervisor. If the emergency facilities are not activated, tours are coordinated by the Nuclear Information Office.

# PNPS EMERGENCY PLAN

## 4. Coordination of Public Information

- a. The PNPS Company Spokesperson is the primary spokesperson for PNPS during an emergency. The Company Spokesperson has direct access to all necessary information (see Section B.5).
- b. The Media Center is staffed by Federal and Commonwealth emergency management agencies and PNPS to assure timely exchange and coordination of information. Representatives coordinate information prior to distributing news releases and prior to news briefings.
- c. Rumors or misinformation are identified during an emergency by the Media Monitor and Media Phone Team responders located at the Media Center. They respond to media calls and broadcasts and reports of misinformation or rumors are forwarded to the Media Center Supervisor for an appropriate response by Media Center staff. Rumor control is also provided for by the Commonwealth of Massachusetts Emergency Management Agency.

5. Media Orientation: The annual PNPS Media Orientation is coordinated with offsite agencies to acquaint the news media with emergency plans, basics of nuclear power operation and radiation fundamentals. The news media typically are provided a tour of the Media Center or other emergency response facilities. Reporters receive information about Media Center activation and accessibility during a declared emergency at PNPS.

# PNPS EMERGENCY PLAN

## Section H: Emergency Facilities and Equipment

This section describes the emergency facilities and equipment used by the Pilgrim Nuclear Power Station (PNPS) Emergency Response Organization. It outlines the facilities and equipment requirements which aid in the timely and accurate response by the PNPS Emergency Response Organization. It also describes the surveillance programs used to monitor and insure that these facilities and equipment are maintained in a high degree of constant readiness.

1. Technical Support Center (TSC), Operations Support Center (OSC), and the Control Room: PNPS has established an onsite Technical Support Center (TSC) and Operations Support Center (OSC). The TSC and OSC are activated upon declaration of an Alert or above or at the discretion of the Emergency Director (ED) or Operations Shift Superintendent. Until they become operational, required functions of these facilities are performed in the Control Room.

The Control Room is located on the 37' elevation of the Turbine Building. The Control Room is the focal point for all plant operational activities. The Control Room contains the instrumentation, control devices and displays necessary for operation of the reactor and turbine generator under normal and emergency situations.

The Control Room is staffed by Licensed Nuclear Plant Operators and Senior Licensed Nuclear Plant Operators. All plant-related operations are directed from the Control Room and supervised by the Operations Shift Superintendent. During emergency operating conditions, only those personnel who are required for the safe operation of the plant are allowed access to the Control Room.

The TSC and OSC along with the Emergency Operations Facility (EOF) are the primary emergency response facilities in support of the Control Room. The primary emergency response facilities have been designed and built to withstand the most adverse conditions reasonably expected during the design life of the plant including adequate capabilities for earthquakes, high winds and floods. Each facility is equipped with fire alarm and suppression systems, and back-up diesel generated electrical power.

The TSC is located within the Protected Area on the ground floor of the Operations and Maintenance Building. The TSC provides facilities near the Control Room for technical, engineering and management support of operations personnel during emergency conditions. It also permits direct interface of management personnel with the plant operators, if necessary.

The TSC has a large working area with space sufficient to accommodate the pre-designated TSC staff. The TSC is also able to accommodate seven (7) NRC representatives. Working areas are available and a desk has been provided for NRC use. The TSC is the primary communications link between the Control Room and the EOF. It also acts as an onsite communications center for the plant during an emergency.

A subset of the TSC is the Engineering Support/Technical Assessment Group (TAG). This group is made up of personnel from the Nuclear Engineering Staff. Specific personnel assignments are determined at the time of the emergency by the TSC Supervisor and the Engineering Support/Technical Assessment Group Coordinator based on the type of incident occurring at the Station.

## PNPS EMERGENCY PLAN

The OSC is located on the ground floor of the Operations and Maintenance Building next to the TSC. The OSC is an onsite assembly area separated from the Control Room and the TSC where pre-designated support personnel report in an emergency. All personnel dispatched into the Plant in an emergency are coordinated through the OSC after its activation. Response teams dispatched from the OSC include Post Accident Sampling Teams, Radiological Protection Re-entry Teams, Damage Control Teams, Maintenance personnel, search and rescue, and Emergency Medical personnel.

2. Emergency Operations Facility (EOF): PNPS has established an Emergency Operations Facility (EOF) in the basement of the Plymouth County Sheriff's facility on the grounds of the Plymouth County House of Correction in Plymouth, Massachusetts approximately four (4) miles west of PNPS. The building is shielded and equipped with a filtered ventilation system and backup electrical supply system. The EOF is the central facility for the evaluation and coordination of all licensee activities in response to an emergency. Here information is provided to representatives of Federal, Commonwealth, and local authorities who respond to an emergency at PNPS.

The EOF is a PNPS controlled and operated facility. The EOF is equipped with an intrusion detection system. Security personnel are assigned to control EOF access.

During an emergency, the EOF is staffed and equipped to provide for the overall management of the Station's emergency response; coordination of radiological and environmental assessment; development of protective action recommendations for the general public; and coordination of emergency response activities with Federal, Commonwealth and local agencies.

The EOF consists of an Operations Room, a Communication Room, conference rooms and several office areas. In addition to the pre-designated PNPS emergency response organization staff, the EOF has space to accommodate twelve (12) NRC representatives as well as representatives from FEMA, MDPH, and MEMA and key local authorities. If necessary, the EOF may be used to accommodate outside technical support groups.

In the event an EOF evacuation becomes necessary, operations can be transferred to the Alternate Emergency Operations Facility (AEOF). The AEOF is located at the Boston Edison Service Center, Mass. Ave. and is approximately 35 miles northwest of PNPS. The AEOF has accommodation for up to 40 people. It is equipped with site maps, office furniture, supplies and back-up communication systems.

3. Emergency Operations Centers (EOC): Emergency Operations Centers in each of the communities supporting a response to an incident at PNPS have been established to perform direction and control of response functions. PNPS provides support for the local communities in the design and maintenance of their facilities.



## PNPS EMERGENCY PLAN

The Town of Plymouth EOC is located in the Plymouth Memorial Hall. The EOC serves as command and control headquarters for local emergency response activities as well as a center for the coordination of communications to local field units and to the Commonwealth and MEMA Area II EOCs. The EOC has the equipment necessary, (such as facsimile machines, telecommunications equipment, radio gear, photocopiers, wall maps, etc.) to carry out its emergency responsibilities. The other plume exposure EPZ communities of Kingston, Duxbury, Carver, and Marshfield, all in Massachusetts, are similarly equipped. In addition, the Reception Center communities are equipped with similar facilities and equipment.

The Commonwealth EOC is located at MEMA headquarters in Framingham, Massachusetts and serves as the command and control center for offsite emergency response. The Commonwealth EOC is capable of continuous (24-hour) operations for a protracted period. The center contains sufficient communications (radio, telephone and teletype) equipment, maps, emergency plans, and status boards to provide the necessary interfaces with other Commonwealth, local, Federal and PNPS emergency facilities.

The Media Center is located at the Entergy Industrial Park Training Center in Plymouth, approximately 6.5 miles north west of PNPS. The Media Center is staffed by PNPS and government public information representatives who will be the source of public information during an emergency at PNPS. The Media Center is activated upon declaration of an Alert. If, due to radiological or other conditions, the Media Center is found to uninhabitable, it will be relocated to the Alternate Media Center at the offices of Duke Engineering and Services in Marlborough.

The MEMA Area II EOC is located at MEMA Area II Headquarters in Bridgewater, Massachusetts. The EOC is located near the plume exposure EPZ and serves as the local liaison with the Commonwealth EOC to coordinate emergency operations among local communities.

The State Police Troop D Headquarters, located in Middleboro, Massachusetts is the primary Commonwealth notification point. Continuous communication coverage is provided by dispatcher on a 24-hour basis.

4. Activation: PNPS has put into place plans and procedures to insure the timely activation of its emergency response facilities. Although the response time will vary due to factors such as weather and traffic conditions, a goal of thirty (30) minutes for minimum staffing and one (1) hour for full manning has been established for onsite emergency facilities including the EOF. Plans have been developed to insure timely functional activation and staffing of additional facilities (Media Center and the Corporate Emergency Center).
5. Monitoring Equipment for Classification: PNPS has identified and installed onsite monitoring systems that are utilized to assess the incident and make determinations on the proper emergency measures to be implemented. This equipment includes but is not limited to the following:

## PNPS EMERGENCY PLAN

- a. PNPS has two meteorological towers equipped with instrumentation for continuous reading of wind speed, wind direction, air temperature, and difference in air temperature (160' to 33' and 220' to 33'). PNPS has the indirect capability of locally monitoring hydrological data by use of instrumentation installed on process water systems. Seismic monitors are located throughout the plant, data from these monitors is recorded in the Control Room.
- b. Installed radiological monitors indicate the status of the plant and any radiological release that may have occurred. The Control Room is equipped with plant radiation monitoring instrumentation for use in both normal and emergency conditions. The Containment High Radiation Monitoring System is designed to measure post-accident radiation levels in the drywell and the torus during accident conditions. The range of these monitors is 1 to 1.0E+7 R/hr. The Main Stack, the Reactor Building Exhaust Ventilation and the Turbine Building are equipped with high range radiation monitoring systems designed to measure elevated radiation levels.

A Post-Accident Sampling System (PASS) provides a mechanism to monitor the integrity of the reactor fuel and cladding during and following an accident. The PASS, through the appropriate valve lineup, is capable of drawing gas and liquid samples from the primary containment system (i.e., reactor, the drywell and the torus) and secondary containment air samples.

PASS samples provide information on reactor core integrity; the types and quantities of fission products released into the primary containment environment; the reactor coolant chemistry and the hydrogen concentration in the containment. The samples can be collected without incurring excessive radiation exposures to any individual. Samples are obtained at a shielded sampling station and diluted as necessary. Portable shielding is also provided to reduce anticipated radiation dose rates.

- c. The Control Room and applicable redundant backup locations are equipped with extensive plant process monitors for use in both normal and emergency conditions. These indications include but are not limited to reactor coolant system pressure and temperature, containment pressure and temperature, liquid levels, flow rates, status or lineup of equipment components. This instrumentation provides the basis for initiation of corrective actions.
  - d. The PNPS has installed fire and combustion detection equipment at PNPS in compliance with 10CFR50 Appendix R.
6. Offsite Monitoring Equipment: PNPS has made provisions to perform offsite monitoring during emergency situations.
- a. Offsite sources of information pertaining to geophysical phenomena include the National Weather Service located at Logan Airport in Boston for meteorological data, and local marine forecast data and Coast Guard facilities provide hydrological data, and Weston Observatory provides seismic activity.

## PNPS EMERGENCY PLAN

- b. PNPS has established radiological and environmental radiation sampling and monitoring stations at PNPS and nearby areas as part of the Radiological Environmental Monitoring Program. These Stations are used for continuous long-term radiological background assessment of the environs surrounding PNPS. These Stations monitor a variety of media and pathways including gaseous and particulate sampling equipment and thermoluminescent dosimeters (TLDs) which may be used in an emergency for accident assessment. The locations and specific capabilities of these Stations are contained in the PNPS Offsite Dose Calculation Manual.
- c. In addition to the analytical capabilities of the EOF, outside analytical assistance may be requested from Commonwealth and Federal agencies and other utilities if necessary. PNPS has access to additional laboratory facilities through agreements with the Duke Engineering & Services and the Department of Energy (DOE) Brookhaven Area office (located in Upton, New York). It is estimated that these laboratories will be able to respond within eight (8) hours from initial notification.

The Duke Engineering & Services environmental laboratory is located in Westboro, Massachusetts. The laboratory has the capability of analyzing terrestrial, marine and air samples. Their instrumentation includes:

1. HPGe detectors
2. Beta-Gamma units (I-131 analysis)
3. Beta-Beta anti-coincidence unit (Sr-90 analysis)
4. Gas proportional counters (gross alpha-beta)
5. Liquid scintillation counter

The DOE, through the Interagency Radiological Assistance Program (IRAP) has access to any national laboratory with Bell Lab contract (i.e., Brookhaven, Oak Ridge, Lawrence Livermore, etc.).

7. Offsite Monitoring Equipment Storage: The EOF has been designated as the central point for storing offsite radiological monitoring equipment. Additional equipment is available at PNPS and other facilities (i.e., Warehouse, Commonwealth and local facilities), if needed. The EOF contains portable survey, counting, and air sampling instrumentation and other radiological monitoring equipment and supplies to be used by PNPS and Nuclear Incident Advisor Team (NIAT) offsite monitoring teams. Table H.1 illustrates examples of the types of equipment available for offsite monitoring.

Monitoring team equipment is capable of detecting and measuring radioiodine concentrations in air as low as  $1.0E-7$   $\mu\text{Ci/cc}$  under field conditions. Interference from the presence of noble gas and background radiation will be minimized by ensuring that monitoring teams move to areas of low background prior to analyzing the sample cartridge.

8. Meteorological Monitoring: PNPS has installed two meteorological towers equipped with instrumentation for continuous reading of the wind speed, wind direction, air temperature and delta air temperature at 33 foot and either the 160 or 220 foot elevations. The 220 and 160 foot meteorological towers record information and report this data locally at the meteorological tower and the 220 foot also reports information to the Control Room. Meteorological data is also sent to and retrieved from the PNPS meteorological computer system.

## PNPS EMERGENCY PLAN

PNPS has the capability for making remote interrogation of the atmospheric measurements and predictions. Additional capabilities are available to obtain representative current meteorological information from other sources, such as the National Weather Service.

9. OSC Equipment: The TSC, OSC, and EOF are equipped with ventilation systems similar to the Control Room ventilation system. The ventilation systems use both High Efficiency Particulate and charcoal filters.

Radiological monitoring is performed in each emergency response facility. Radiation dose rates and airborne radioactivity concentrations are measured inside each facility while it is in use during an emergency. This monitoring will detect adverse conditions that may affect the habitability of the facility. Equipment is available which can distinguish the presence of radioiodine at concentrations as low as  $1.0E-07 \mu\text{Ci/cc}$ .

Radiation protection equipment (i.e., protective clothing, respiratory protection gear and other health physics equipment and supplies) is stored and maintained at each emergency response facility. Table H.2 illustrates the equipment typically available to each facility. This equipment is for re-entry team activities. If necessary, this equipment will be used for emergency response personnel within the facility to allow them to function during the presence of low-level airborne radioactivity or radioactive surface contamination. Sufficient potassium iodide is available for use by Control Room, TSC, and OSC, and EOF personnel.

One-hour self-contained breathing apparatus (SCBA) packs and bottles have been placed at strategic points within the Station. A cascade air compressor is maintained onsite. A back-up compressor is located at Plymouth Fire Department headquarters approximately 2.5 miles from the site. Arrangements exist to permit PNPS 24-hour access to this back-up compressor if the station compressor is inoperable, or if the air in station environs is contaminated.

The Medical Building, located near the main parking lot, is supplied with an assortment of first aid and medical treatment equipment and supplies that are used on a daily basis. Emergency medical treatment equipment and supplies are also stored in the primary Emergency Assembly Area. In addition to normal Station decontamination equipment, the EOF is equipped with personnel decontamination supplies and a decontamination shower for use in an emergency. The EOF is also equipped with a holding tank to secure contaminated materials. Table H.3 and H.4 illustrate the supplies found in the medical and decontamination kits.

Damage Control Equipment is available in the OSC and additionally in maintenance shops or PNPS warehouses located inside the Protected Area. This equipment includes items such as portable lighting and portable communications equipment. See Table F.1 for the matrix of communications capability. For a complete description of communications equipment available during an emergency, refer to Section F of this Emergency Plan.

## PNPS EMERGENCY PLAN

10. Facility and Equipment Readiness: Emergency facilities and equipment are inspected and inventoried in accordance with departmental administrative procedures. The inspection includes an operational check of instruments and equipment. Equipment, supplies and parts which have a shelf-life are identified, checked and replaced as necessary. Sufficient reserves of instruments/equipment are maintained to replace those which are removed from emergency kits or lockers for calibration or repair. Dedicated communications equipment between Federal, Commonwealth and local government agencies within the plume exposure pathway EPZ are checked periodically in accordance with Section N.2.

The results of tests, inventories, and inspections conducted in accordance with Emergency Preparedness Administrative Procedures, are submitted to the Emergency Preparedness Superintendent for review. The Emergency Preparedness Superintendent is responsible for the evaluation of these results and assignment of corrective actions for deficiencies identified, if any.

The Emergency Preparedness Superintendent will be informed of select system inoperability determinations resulting from any tests, inventories or inspections conducted on the systems identified in Table H-5, as the availability of these systems can have significant impact on the Emergency Plan. When notified of a Table H-5 system inoperability, the Emergency Preparedness Superintendent will inform the Nuclear Assessment Director within one business day of the inoperable condition, as well as of compensatory measures taken, if any.

11. General Use Emergency Equipment: Tables H.1, H.2, H.3, and H.4 identify by general category the equipment that typically make up emergency kits used in an emergency situation. Table F.1 shows available communications equipment. PNPS cooperates with local and Commonwealth officials to insure that sufficient and appropriate emergency kits are made available.
12. Collection Point for Field Samples: The EOF has been designated as the central point for the receipt and analysis of radiological field monitoring samples. Sampling and analysis equipment is available for activity determination of these samples. Sufficient field monitoring equipment is maintained at the EOF for initial sampling. Monthly surveillance and maintenance is performed to insure the readiness of field monitoring equipment. Instrumentation and equipment utilized for activity determination are routinely calibrated to insure timely availability.

# PNPS EMERGENCY PLAN

Table H-1: Typical Offsite Monitoring Equipment

PRM-4A	Coveralls
HP 240 Hand Probe	Hoods
TLDs	Rubber Gloves
Pocket Dosimeters 0-500 mR	Cotton Gloves
Pocket Dosimeters 0-1R	Paper Pads
Dosimeter Chargers	Pens
Smears	Bullhorn
Filter Paper	Scissors
Silver Zeolite Cartridges	Screwdriver
Air Sampler	Pliers
Sample Timer	Flashlight
Sample Labels	Allen Wrench Set
Plastic Bags	Health Physics Procedures
Batteries 9 V	Area Maps
Batteries 1.5 V	Cs-137 Check Source
Contaminated Materials Stickers	Full Face Respirators
Masking Tape	Portable Radio
Petri Dishes	Clipboard
Portable Generator	SAM-2 Counting System
Pocket Knife	

# PNPS EMERGENCY PLAN

Table H-2: Typical Radiation Protection Equipment

RO2A or Equivalent	Coveralls
120 V Air Sampler	Hoods
RAS Air Sampler	Rubber Boots
E-520 or Equivalent	Rubber Gloves
TLDs	Cotton Gloves
Pocket Dosimeters 0-1R	Plastic Slip-Ons
Pocket Dosimeters 0-5R	Pens
Dosimeter Chargers	Paper Pads
Smears & Folders	Clipboards
Air Sample Filter paper	Masking Tape
Sample Timer	Radiation Warning Tape
Sample Labels	Radiation Warning Signs
Plastic Bags	Area Maps
Batteries 9 V	Cs-137 Check Source
Batteries 1.5 V	Health Physics Procedure

# PNPS EMERGENCY PLAN

Table H-3: Typical Medical Equipment

Penlight	Thermometer
Gauze Pads, 4x4, Sterile	Surgical Brush
Gauze Pads, 3x3, Sterile	Scalpels (size 15, 11 and 10)
Gauze Pads, 2x2, Sterile	Scalpel Handle
Alcohol Prep Swabs	Normal Saline Solution
ABD Pads	#11 Blades
Airway	Bandage Scissors
Cotton Tip Swabs	Adult Airway
Arm Splints	Stethoscope
Leg Splints	3" Ace Bandage
Tincture of Green Soap	4" Ace Bandage
Specimen Jars	Large Straight Scissors
Sanitary Pads	Ophthalmoscope Kit w/batteries



# PNPS EMERGENCY PLAN

Table H-4: Typical Decontamination Equipment

Plastic Tub	Bottle for Liquid Radioactive Waste
Caps	Masking Tape
Masks	Paper Pad
Gauze Pads, 4x4, Sterile	Pens & Pencils
Non-allergic Tape	Clipboard
Disposable Paper Lab Coats	Scissors
Plastic Slip-Ons	Plastic Bags
Rubber Gloves	Plastic Wrap
Cotton Gloves	Surgeon Brushes
Decontamination Soap	Normal Saline Solution
Radiological Health Handbook	Towels
Potassium Permanganate Solution	Titanium Dioxide Paste

# PNPS EMERGENCY PLAN

## Table H-5 Pilgrim Station systems requiring reporting to Emergency Preparedness

Technical Support Center Diesel Generator

Technical Support Center HVAC System

Pilgrim Station Gaitronics System

Pilgrim process computer (EPIC/SPDS)

Technical Support Center Electrical System (including UPS)

# PNPS EMERGENCY PLAN

## **Section I: Accident Assessment**

To effectively coordinate and direct all facets of the response to an emergency situation at Pilgrim Nuclear Power Station (PNPS), diligent accident assessment efforts are required throughout the emergency. All four emergency classifications have similar assessment methods, however, each classification requires a greater magnitude of assessment effort dependent upon the plant symptoms and/or initiating event(s).

### **1. Plant Parameters and Corresponding Emergency Classification**

- Plant system and effluent parameter values are utilized in the determination of accident severity and subsequent emergency classification. Environmental and meteorological events are also determining factors in emergency classification.
- An emergency condition can be the result of just one parameter or condition change, or the combination of several. The specific symptoms, parameter values or events for each level of emergency classification are detailed in the PNPS Emergency Plan Implementing Procedures.
- In order to adequately assess the emergency condition, each emergency facility has the necessary equipment and instrumentation installed to make available essential plant information on a continuous basis. The detailed instrumentation and equipment capabilities available for each emergency facility are described in Section H of the PNPS Emergency Plan.

### **2. Onsite Accident Assessment Capabilities**

- **Post Accident Sampling System** - The Post Accident Sampling System (PASS) allows for the remote sampling and analysis of containment and drywell gas, and reactor and torus liquid. The results of the PASS sample are decay and volume corrected and then utilized to determine fuel and cladding integrity. Once the amount of core damage is determined, the total curie inventory available can be ascertained. The inventory available can be determined for any estimated amount of core damage, since there is a finite number of curies available for release to the coolant.
- **Area Radiation & Process Radiation Monitors** - PNPS has Area Radiation Monitors (ARM) for the direct measurement of in-plant exposure rates and Process Radiation Monitors (PRM) for the measurement of noble gas and radioactive iodine concentrations in plant effluents. The ARM readings allow in-plant exposure rate determinations to be made remotely without requiring local hand-held meter surveys. This information may be used, initially, to aid in the determination of plant area accessibility. The Process Radiation Monitors provide an immediate indication of a radiological release of effluents. The PRM readings can be used as an input into the Dose Assessment and Protective Action Recommendation (DAPAR) computer code which displays the projected whole body and thyroid exposures to the populace in the plume exposure pathway.

# PNPS EMERGENCY PLAN

- Containment Radiation Monitors - Containment High Range Radiation Monitors (CHRMS) can be provided as an early indicator of core damage. The monitor readings are utilized as an alternate method for core damage determination. This is accomplished through use of established graphs. The core damage estimate obtained from the nomograms may also be used to confirm the core damage results obtained through use of the PASS system. High range monitors for both the drywell and torus allow for the evaluation of a potential radiological release.

### 3. Release Source Term Determination

- a. The potential for release of radioactive material and the magnitude of the release can be assessed through use of the Containment High Range Monitoring System (CHRMS) and Process Monitors. The Containment High Range Monitoring System readings can be used to estimate the percentage of core damage and establish the total number of curies available for release.
- b. If a liquid or gaseous release occurs, the routine or high range process monitors will indicate the release rate in counts per second or Roentgens per hour. If the release is from an unmonitored point, technicians will take grab samples to be analyzed.

Routine and high range monitors are located on the Main Stack and the Reactor Building. A high range monitor is located in the Turbine Building. The readings obtained from these monitors are converted to actual release rates through the use of the Dose Assessment and Protective Action Recommendation (DAPAR) computer code.

4. Effluent Monitor Data and DAPAR: The correlation between effluent monitor data and onsite and offsite exposure rates is accomplished through use of the Dose Assessment and Protective Action Recommendation (DAPAR) computer code. DAPAR is a computer code which allows for the direct input of effluent monitor and meteorological data. The computer will generate release rates, projected dose rates and doses to the whole body and thyroid as well as downwind halogen and particulate concentrations via the plume exposure pathway. Dose projections may also be performed without the use of a computer through a series of hand calculations.
5. Meteorological Information: Meteorological data are available from two meteorological towers, a 220 foot primary and a 160 foot back-up. The data available includes wind speed, wind direction, temperature, and delta temperature. These data are utilized by the utility, Commonwealth and NRC to provide near real-time predictions of the atmospheric effluent transport and diffusion.

Meteorological data from the 220 foot tower is available to the Control Room, the Technical Support Center SPDS, and Emergency Operations Facility SPDS. Meteorological data is available from the 160 foot tower via local readout.

6. Unmonitored Release: If during an actual release, via an unmonitored flow path or in situations in which effluent monitors are either off-scale or inoperative, dose projections can be made through use of actual sample data.

## PNPS EMERGENCY PLAN

7. Field Monitoring: In the event of an airborne or liquid release, PNPS maintains the resources and capabilities to take air, soil, water, and vegetation samples as well as to directly measure gamma dose rates. Samples are taken at locations specified by the Offsite Radiological Supervisor. Environmental measurements are utilized as an aid in the determination of protective and recovery actions for the general public.
8. Radiation Monitoring Teams: Radiation Monitoring Teams (RMTs) are available at an Alert or higher classification to make rapid assessments of the actual or potential magnitude and location of any radiological hazards from the liquid or gaseous release pathways. RMTs are composed of two individuals, at least one of whom is a qualified Radiological Protection technician.

RMTs establish and maintain direct radio communications with the Emergency Operations Facility (EOF). The teams are controlled by the Radiation Laboratory and Monitoring Team Coordinator in the EOF. The RMTs locate and monitor the radioactive plume while taking air samples as directed.

Survey data from RMTs are used to define affected areas, verify or modify dose projections and protective action recommendations, and assess the extent and significance of a release.

9. Iodine Monitoring: RMTs collect air samples while in the plume exposure pathway. The teams carry procedures and equipment for sampling and measuring radioiodine concentrations in air as low as  $1.0E-7$  micro curies per cubic centimeter in the presence of noble gases.
10. Dose Estimates: Specific procedures exist for the correlation of air activity levels to dose rate for key isotopes. Provisions have been established for estimating integrated dose from the projected and actual dose rates and for the comparison of these estimates with the protective action guides.
11. Commonwealth Monitoring Capabilities: The Commonwealth of Massachusetts has the ability to dispatch its own field monitoring teams to track the airborne radioactive plume. The Commonwealth also has the ability and resources to interpret radiological data as well as coordinating with federal and utility monitoring teams to compare sample results.

# PNPS EMERGENCY PLAN

## Section J: Protective Response

Protective response consists of emergency actions, taken during or after an emergency situation, which are intended to minimize or eliminate hazards to the health and safety of the public and/or Station personnel. A range of protective actions has been developed for emergency workers and the general public in the plume exposure pathway Emergency Planning Zone (EPZ). Additionally, guidelines have been established to aid in choosing protective actions during an emergency that are consistent with federal guidance. PNPS is responsible for onsite actions, while the responsibility for offsite actions rests with the Commonwealth of Massachusetts, local authorities and other offsite response agencies.

1. Notification of Onsite Personnel: For all emergency classifications, all personnel within the Protected Area are notified of the declaration, escalation or termination of an emergency by alarms and verbal announcements over the Station Public Address System (Gaitronics). Announcements include the emergency classification and response actions to be taken by site personnel.

Upon declaration of an Alert or higher classification, if open, public access areas are closed and persons advised, via outside speakers, to evacuate those areas. The evacuation of public areas is verified by Security personnel.

2. Evacuation Locations: If Protected Area evacuation is required, personnel are directed to evacuate to an assembly area. The Support Building cafeteria is designated as the primary assembly area. Should conditions warrant, personnel may be directed to evacuate via personal automobiles to the alternate assembly area, the Chiltonville Training Center. The assembly area is chosen on the basis of wind direction. Visitors to the station assemble with their escorts.
3. Radiological Monitoring: In the event of Protected Area evacuation, radiation protection personnel are dispatched to the designated assembly area, to provide radiological monitoring and, if necessary, decontamination of evacuees.
4. Evacuation: Evacuation is the primary protective action anticipated for onsite personnel not having emergency response assignments. Contractors who do not have emergency responsibilities, visitors, and handicapped personnel are evacuated immediately at the Alert or higher classification.

Evacuation of non-essential PNPS personnel is initiated upon declaration of either a Site Area Emergency or General Emergency. The shorefront recreation area is closed at the declaration of an Alert or higher classification, and visitors asked to leave.

5. Accountability: At the declaration of Site Area Emergency, all non-essential personnel are evacuated. All individuals onsite are accounted for and the names of missing individuals are ascertained within 30 minutes of the initiation of accountability. Once established, accountability within the Protected Area is maintained throughout the course of the event. Should missing personnel be identified, search and rescue operations are initiated. Accountability is coordinated by the Emergency Security Supervisor and the results forwarded to the Emergency Plant Manager.

## PNPS EMERGENCY PLAN

6. Provisions for Onsite Personnel: PNPS maintains an inventory of respiratory protection equipment, anti-contamination clothing, and radioprotective drugs which are made available to emergency workers remaining onsite should conditions warrant.
  - a. Self-contained breathing apparatus (SCBAs) are used as the primary method of respiratory protection in an emergency. Emergency response personnel use SCBAs in any environment involving exposure to high level gaseous activity or oxygen deficient atmosphere, or where air quality is in doubt. In the presence of airborne particulates, emergency response personnel may be directed by health physics personnel to use full-face filter type respirators.
  - b. Anti-contamination clothing, located in the Operations Support Center (OSC) lockers and dress out area, is available for use by onsite re-entry personnel.
  - c. Procedures are in place for the use of thyroid-blocking agents by emergency response personnel. Administration of such agents may be authorized only by the Emergency Director or by the Emergency Plant Manager when authority has been delegated by the Emergency Director.
7. Protective Action Recommendations for the General Public: Plant conditions, projected doses, and/or field monitoring data are evaluated to develop protective action recommendations for the purpose of preventing or minimizing exposure to the general public. Protective action recommendations for the plume exposure pathway are based on the Environmental Protection Agency (EPA) Protective Action Guides (PAGs) discussed in EPA-400-R-92-001 - "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents".

Protective action recommendations are made directly to the Commonwealth agencies who are responsible for implementing protective actions for the general public within the plume exposure EPZ. Protective action recommendations are made by the Emergency Director to MEMA, through the MDPH EOF Liaison. In an emergency which requires immediate protective actions be taken prior to activation of emergency facilities, notification is given by the Emergency Director in the Control Room directly to the Commonwealth, EPZ, and reception communities via the DNN network.

Possible recommendations issued by PNPS at a General Emergency include:

- Evacuation of the general public within the two (2) mile ring of PNPS and five (5) miles downwind. All other areas within the EPZ are sheltered (minimum PAR issued).
- Evacuation of the general public within five (5) mile ring of PNPS and ten (10) miles downwind. All other areas within the EPZ are sheltered.

Table J-1 summarizes the typical PNPS Protective Action Recommendations for the general public based on projected dose to the population-at-risk.

## PNPS EMERGENCY PLAN

8. Evacuation Time Estimates: An independent evacuation time study has been performed to provide estimates, by subarea, of the time required to evacuate resident and transient populations surrounding Pilgrim Station under favorable and adverse conditions (see Appendix 5). These evacuation time estimates are used to determine an exposure period for the calculation of dose projections.
9. Protective Measure Implementation: The responsibility for implementing protective measures based on protective action guides rests with Commonwealth and local agencies.
10. Factors Affecting Protective Measure Implementation The PNPS, Commonwealth, and local emergency plans used to implement the protective measures for the plume exposure pathway take numerous factors into consideration. Among these considerations are:
  - a. Most of the evacuating population will travel in their own vehicles, leaving the EPZ via designated evacuation routes. Figures J-1 through J-5 are maps showing the evacuation routes, evacuation subareas, reception centers in host areas, and mass care shelters. Pre-selected sampling and monitoring points are presented in Table J-2.
  - b. The population distribution around Pilgrim Nuclear Power Station is presented in the Evacuation Time Estimate, Appendix 5.
  - c. As indicated in Section 7, offsite agencies are notified in the event the Emergency Plan is activated. Commonwealth and local agencies have the capability to notify all members of the transient and resident population within the plume exposure EPZ.
  - d. Means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement are described in Commonwealth and local plans and procedures.
  - e. Provisions for the use of radioprotective drugs, particularly for emergency workers and institutionalized persons within the plume exposure EPZ whose immediate evacuation may be infeasible or very difficult, including quantities, storage, and means of distribution are described in Commonwealth and local plans and procedures.
  - f. Commonwealth and local plans include the method by which decisions are made by the Massachusetts Department of Public Health for administering radioprotective drugs to emergency workers. The distribution of radioprotective drugs to the general public is not authorized by the Commonwealth of Massachusetts.
  - g. Means of relocation of the general public are described in Commonwealth and local plans and procedures.
  - h. Relocation centers in host areas which are at least 5 miles, and preferably 10 miles, beyond the boundaries of the plume exposure emergency planning zone are described in Commonwealth and local plans and procedures.
  - i. Projected traffic capacities of evacuation routes under emergency conditions are described in Appendix 5, the Evacuation Time Estimate.



## PNPS EMERGENCY PLAN

- j. Control of access to evacuated areas and organization responsibilities for such control are described in Commonwealth and local plans and procedures and in Appendix 5, the evacuation time estimate.
  - k. Identification of and means for dealing with potential impediments to use of evacuation routes, (e.g., seasonal impassability of roads) and contingency measures are described in Commonwealth and local plans and procedures
  - l. Time estimates for evacuation of various sectors and distances based on a dynamic analysis (time-motion study under various conditions) for the plume exposure pathway emergency planning zone have been performed and are contained in Appendix 5, the Evacuation Time Estimate.
  - m. The basis for dose driven protective action recommendations are as follows:
    - If projected doses exceed minimum EPA PAGs and timely evacuation is feasible, then evacuation is considered. If timely evacuation is not feasible, (i.e. time required for mobilization, warning and evacuation transit is greater than time before plume arrival), then sheltering is considered.
    - Additionally, if the sheltering dose exceeds the PAG but is less than the projected evacuation dose, then sheltering is considered. A shielding factor of 0.9 is conservatively assumed in the calculation of the sheltering dose. This factor (from SANDIA 77-1725) represents the shielding afforded by a wood frame house.
11. Ingestion Pathway Protective Measures: The responsibility for specifying protective measures to be used for the ingestion pathway rests with the Commonwealth of Massachusetts and the State of Rhode Island. These measures include the methods for protecting the public from consumption of contaminated water and foodstuffs.
12. Monitoring of Evacuees: The Commonwealth and local organizations have the capability to register and monitor evacuees at reception centers. This capability includes personnel and equipment capable of monitoring residents and transients evacuating from the plume exposure EPZ and arriving at the reception centers, in accordance with FEMA guidelines.

# PNPS EMERGENCY PLAN

Table J-1: Protective Action Recommendation Decision Chart

**IF:**

- I. Projected dose is:
  - < 1 Rem Whole Body (EPA TEDE)
  - and
  - < 5 Rem Thyroid (EPA CDE)

- I. Projected dose is:
  - ≥ 1 Rem Whole Body (EPA TEDE)
  - or
  - ≥ 5 Rem Thyroid (EPA CDE)

**THEN:**

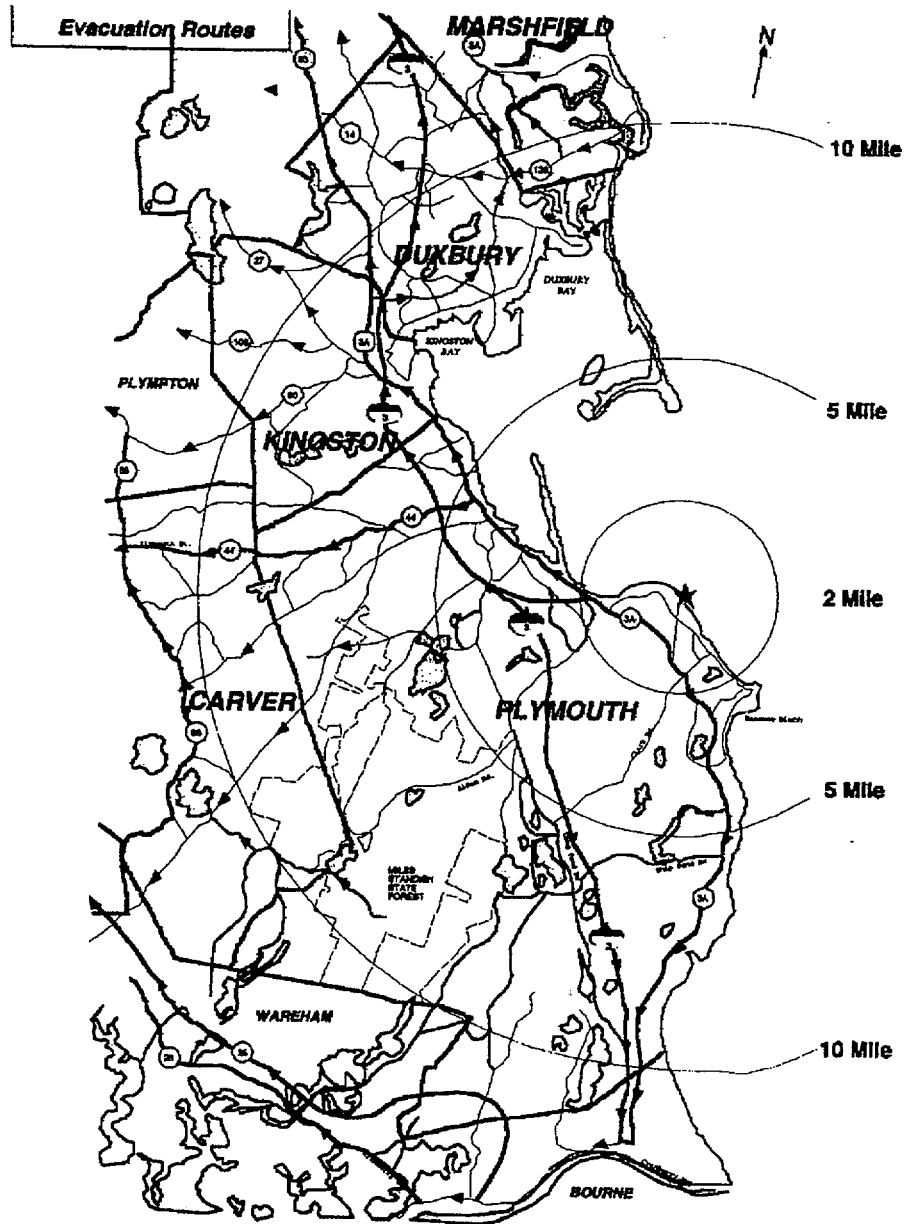
No actions are necessary.

Evacuate \*.

- \* PNPS personnel normally do not have the necessary information to determine whether off site conditions would require sheltering instead of an evacuation. An effort to base Protective Action Recommendations on external factors (such as road conditions, traffic/traffic control, weather or offsite emergency response capabilities) is usually performed by the Commonwealth.

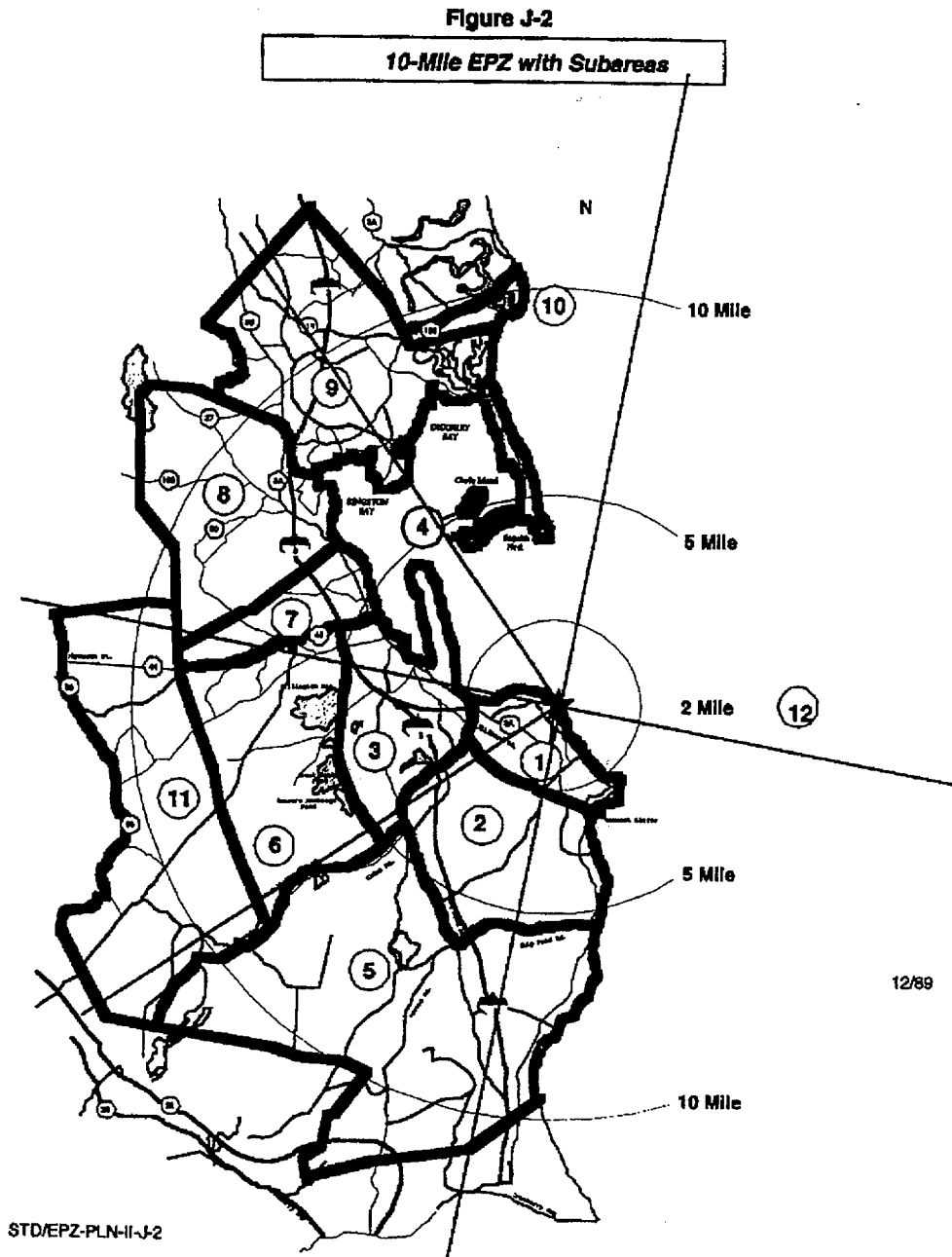
# PNPS EMERGENCY PLAN

Figure J-1: Evacuation Routes



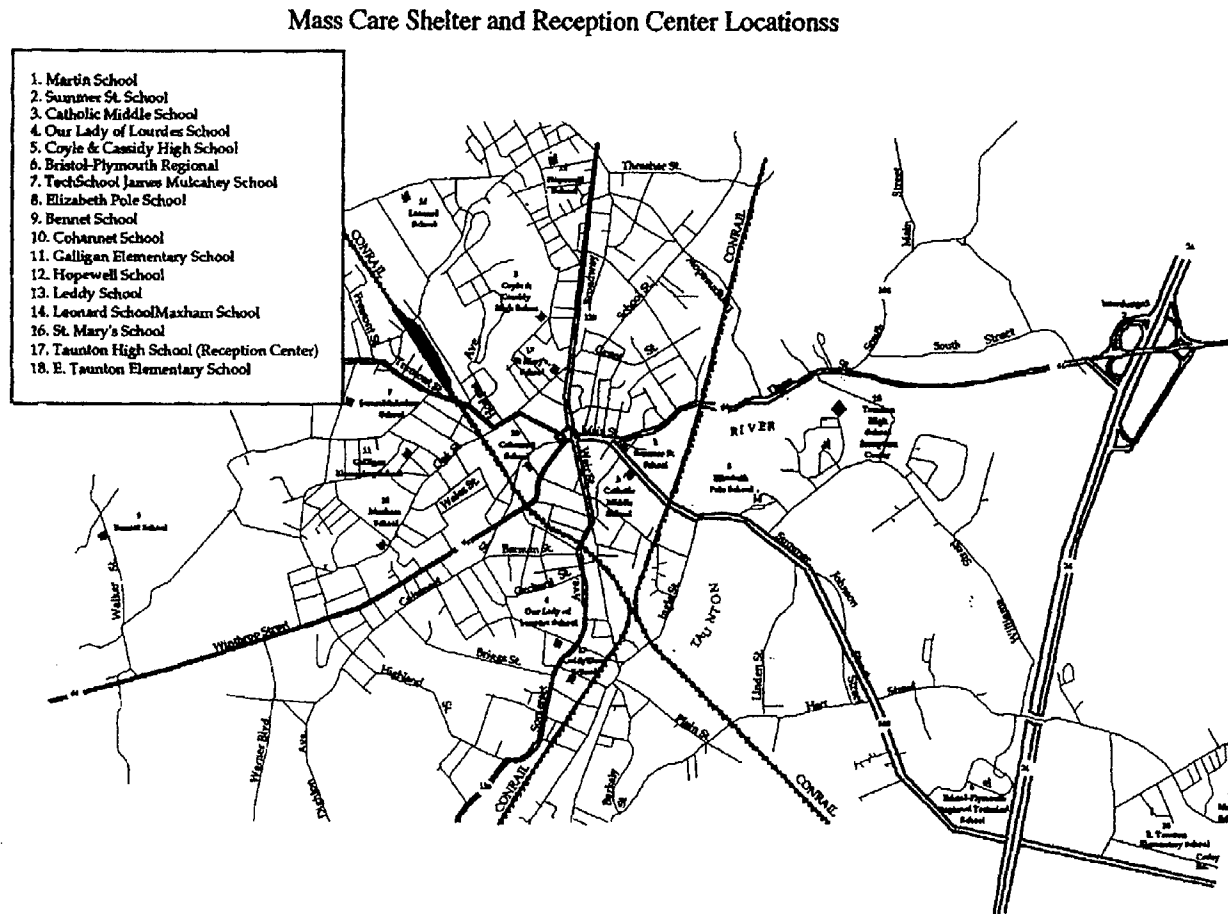
# PNPS EMERGENCY PLAN

Figure J-2: 10-Mile EPZ With Subareas



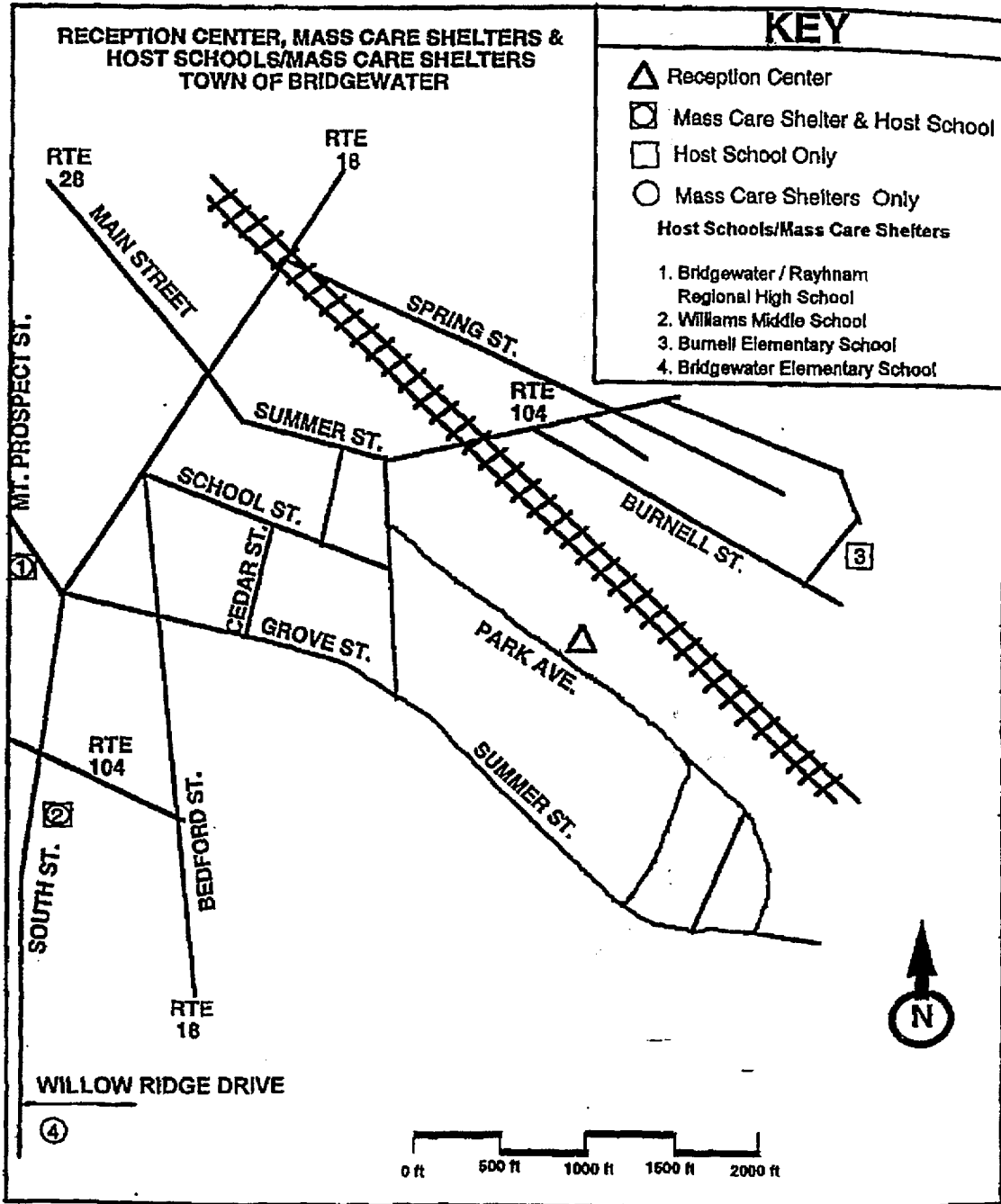
# PNPS EMERGENCY PLAN

Figure J-3: Mass Care Shelter and Reception Center Locations, City of Taunton



# PNPS EMERGENCY PLAN

Figure J-4: Reception Center and Host Schools/Mass Care Shelters, Town of Bridgewater

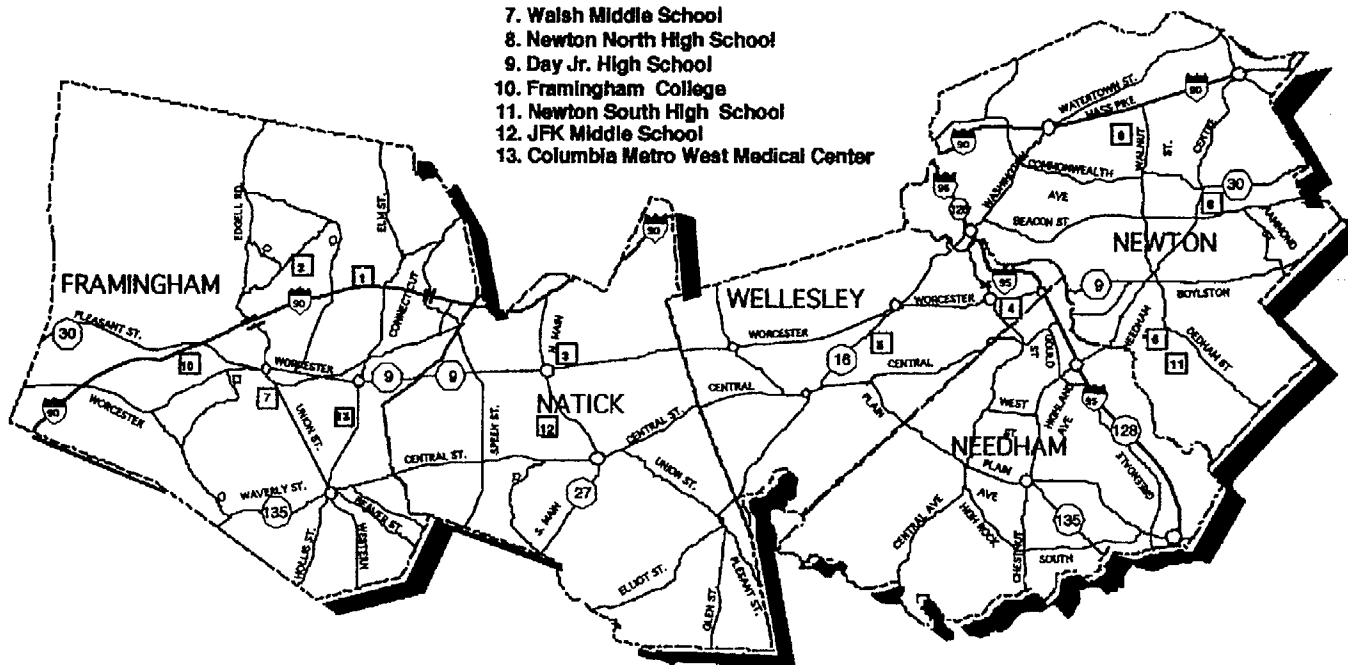


# PNPS EMERGENCY PLAN

Figure J-5: Braintree Reception Center and Host School/Mass Care Shelters

## Braintree Reception Center and Mass Care Shelters

1. Framingham High School
2. Keefe VoTech
3. Natick High School
4. Wellesley Middle
5. Wellesley High School
6. Brown Jr. H. S.
7. Walsh Middle School
8. Newton North High School
9. Day Jr. High School
10. Framingham College
11. Newton South High School
12. JFK Middle School
13. Columbia Metro West Medical Center



# PNPS EMERGENCY PLAN

## Section K: Radiological Exposure Control

This section of the plan describes the means for controlling emergency worker radiological exposures during an emergency, as well as the measures that are used by PNPS to provide necessary assistance to persons injured or exposed to radiation and/or radioactive materials. Exposure guidelines in this section are consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides, EPA 400-R-92-001.

1. Emergency Exposure Guidelines: Radiation exposure in an emergency is controlled, taking every reasonable effort to minimize exposure. However, circumstances may warrant exposure in excess of the EPA-400 general activities limit (5 Rem). Situations in which actions are taken to save vital equipment or property, circumvent substantial exposure to the general public or to save a life are examples of conditions which may necessitate extended emergency exposure authorization. The following are the exposure guidelines for emergency worker activities:

<u>Dose Limit*</u>	<u>Activity</u>	<u>Conditions</u>
5	All	
10	Protecting valuable property.	Lower dose not practical.
25	Life saving or protection of large populations.	Lower dose not practical.
>25	Life saving or protection of large populations.	Only on a voluntary basis to persons fully aware of the risks involved.

\* EPA TEDE values for non-pregnant adults from exposure and intake during an emergency situation in Rem. Workers performing services during emergencies should limit dose to the eyes to three times the listed value and dose to any other organ (including skin and body extremities) to ten times the listed value.

2. Emergency Radiation Protection Program: The Radiological Supervisors ensure that proper personnel radiological monitoring equipment is provided for all personnel during emergencies, that exposure accountability is maintained and that personnel are not sent into known or potential high radiation areas (radiation, contamination or airborne) without adequate protection and exposure controls.

Periodic habitability surveys of emergency facilities are performed during an emergency. If the facility is determined to be uninhabitable, the facility is evacuated in order to prevent or minimize personnel exposures.

Assembly areas (or alternate assembly areas) are established to relocate and monitor evacuated personnel.

The authority to allow radiation exposure above the EPA-400 limits is held by the Emergency Director through recommendations from the Onsite Radiological Supervisor for onsite ERO personnel and the Offsite Radiological Supervisor for offsite (outside the protected area) ERO personnel. The responsibility for authorization of extended exposures for onsite ERO personnel may be delegated to the Emergency Plant Manager but may not be delegated further.



# PNPS EMERGENCY PLAN

In any emergency response action requiring greater exposure than 10CFR20 limits, volunteers over forty-five years of age are considered first. Females of child bearing age shall not be permitted to receive exposures in excess of 10CFR20 limits.

Access to high radiation areas is only permitted with prior approval of the applicable Onsite or Offsite Radiological Supervisor. Prior to entry into a suspected high radiation area, the individual's current quarter exposure is evaluated based upon previous thermoluminescent dosimeter (TLD) readings, and self-indicating dosimeter estimates since the last TLD reading.

## 3. Personnel Monitoring

- a. A TLD badge is issued to all emergency response personnel in the protected area. All Level II GET responders are badged every work day; Level I GET responders are badged at their onsite emergency facilities upon activation. This, in addition to both low and high range self indicating dosimetry, is used to monitor emergency workers exposure during an accident. The capability exists for the emergency processing of TLDs on a 24-hour per day basis, if necessary, through Duke Engineering & Services. Emergency workers are instructed to read self-indicating dosimeters frequently, and TLDs may be processed with increased periodicity.
- b. Emergency worker dose records are maintained in accordance with Station Radiation Protection Procedures.

## 4. Non-PNPS Personnel Exposure Authorization: The responsibility for authorizing non-PNPS emergency workers (i.e. Commonwealth and local agency emergency workers) to receive exposures in excess of the EPA General Public Protective Action Guides rests with the Commonwealth and local organization, except when such emergency workers are onsite. Authorization of exposures in excess of EPA General Public Protective Action Guides, in this latter instance, rests with the Emergency Director or the Emergency Plant Manager (when delegated by the Emergency Director).

## 5. Decontamination and First Aid

- a. Normal contamination control limits apply in emergency conditions. However, these limits may be modified by the applicable Onsite or Offsite Radiological Supervisor should conditions warrant.
- b. Decontamination materials and portable first-aid kits, stored in the Engineering and Support Building and Medical Building, are available. A personnel injury onsite involving possible radioactive contamination is initially treated by an on-shift EMT. Prompt attention is given to life endangering injuries such as extensive burns, serious wounds or fractures, in preference to decontamination. If the injury permits, all reasonable effort is made to decontaminate the individual prior to movement. If decontamination is impractical, the patient is covered in such a manner as to minimize the spread of contamination until medical aid can be obtained or the patient can be hospitalized.

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The ambulance service contracted to the Plymouth Fire Department provides prompt transportation of persons requiring medical attention from the Pilgrim Nuclear Power Station to area hospitals. This service is available on a 24-hour per day basis. For accidents involving contamination, Radiation Protection (RP) personnel accompany the patient to the hospital to assist and advise ambulance personnel.

Patients requiring Emergency Room care, laboratory work, X-rays or lifesaving procedures are transported to the Jordan Hospital (primary) or to Morton Hospital (backup). Hospital personnel have been trained and hospitals are equipped to handle contaminated or radiation injured individuals. Medical personnel may recommend transportation to other medical facilities equipped for long term or intensive care for radiation injuries. RP personnel are available to assist medical personnel with decontamination, radiation exposure and contamination control.

### 6. Contamination Control

- a. Areas in the plant found to be contaminated are isolated as restricted areas with appropriate radiological protection and access control as directed by the Onsite Radiological Supervisor.
  - b. In order to preclude the spread of contamination from restricted areas, all personnel and equipment are monitored for radioactive contamination prior to exiting the restricted areas. Contaminated personnel are decontaminated. Emergency supplies of food and drinking water are stored in sealed containers to prevent contamination. Eating, drinking and smoking are prohibited in all Emergency Response facilities until such time as habitability surveys indicate that such activities are permissible.
  - c. Restricted areas will be returned to normal use when contamination levels have been returned to acceptable levels.
7. Decontamination of Relocated Personnel: Non-essential onsite personnel are evacuated to the Engineering and Support Building cafeteria, as discussed in Section J, "Protective Response". RP personnel at that location monitor evacuees and perform decontamination, as needed. Provisions for extra clothing, as well as suitable decontaminants are available. If radiological or plant conditions warrant evacuation of onsite personnel to the offsite assembly area, Chiltonville Training Center will be used. Radiation Protection personnel are dispatched to the assembly area to monitor for personnel contamination.

# PNPS EMERGENCY PLAN

## **Section L: Medical and Public Health Support**

This section describes Pilgrim Nuclear Power Station (PNPS) arrangements for medical services for contaminated injured individuals sent from the Station.

1. **Hospital Services:** Jordan Hospital is the primary care facility for treatment of contaminated injured persons, and evaluation of radiation overexposure and radionuclide uptake. Jordan Hospital is located in Plymouth, Massachusetts, five miles from PNPS.

Morton hospital, located in Taunton, Massachusetts is designated as a back-up to Jordan Hospital. This hospital is equipped and trained to handle contaminated injured individuals (See Appendix 3 for Sample Letters of Agreement.)

2. **Onsite First Aid Capability:** Personnel injuries involving possible radioactive contamination are initially treated by an on-shift EMT. Prompt attention is given to life endangering injuries in preference to decontamination. (See Section O for training requirements).
3. **Medical Service Facilities:** The Commonwealth of Massachusetts maintains a list of public, private and military hospitals and other emergency medical facilities considered capable of providing medical support for any contaminated injured individuals.
4. **Medical Transportation:** PNPS has arranged with a local ambulance service for transporting victims of radiological accidents to medical support facilities. This service is contracted through the Plymouth Fire Department and is continuously available. (See Appendix 3 for Sample Letters of Agreement).

# PNPS EMERGENCY PLAN

## **Section M: Reentry and Recovery Planning**

This section describes the measures to be taken for reentry into the areas of Pilgrim Nuclear Power Station (PNPS) which have been evacuated as a result of an accident. It also outlines the PNPS Recovery Organization and its concepts of operation.

1. **Reentry:** During an emergency, immediate actions are directed toward limiting the consequences of the accident, so as to afford maximum protection to Station personnel and the general public. Once corrective measures have been taken and effective control of the plant has been re-established, a more methodical approach to reentry is taken. This Emergency Plan therefore divides reentry into two separate categories:
  - a. Plant damage control, mitigation, repair and rescue activities are conducted during the emergency phase of accident. This category of reentry is performed using emergency exposure controls and limits. Briefings for task activities and radiological controls may be provided verbally to dispatched personnel and documented afterwards. Procedures provided to dispatched personnel for emergency activities can be taken from existing plant documents or developed on a case basis for the task.

All personnel dispatched from the onsite emergency facilities are authorized by the Emergency Plant Manager and coordinated through the Operations Support Center Supervisor, the assigned Team Coordinator and the Onsite Radiological Supervisor if necessary.

The following items are considered when planning the dispatch of personnel during an emergency:

- Team composition which considers:
  - \* Previous non-emergency exposure for ALARA considerations.
  - \* Exposure accumulated during the course of the emergency.
  - \* Experience with the assigned task.
  - \* Familiarity with any existing procedures or processes.
  - \* Physical capacity to perform the task.
- Nature of the task including applicable procedures if available.
- Equipment, tools, instrumentation and materials necessary for the task.
- Physical location where the task is performed.
- Safety precautions pertaining to both the task and to personnel.
- Communications equipment, channels, backup and reporting expectations.

## PNPS EMERGENCY PLAN

- Any special instructions applicable to the task or evolution.
  - Radiological controls associated with the activity.
- b. Plant control, restoration, repair and maintenance activities are conducted during the recovery phase of an accident. This category of reentry is performed using exposure controls based on 10 CFR 20 limits and normal PNPS levels. Either existing procedures or procedures developed specifically for the task (developed, reviewed and approved through the normal plant administrative control process) are utilized for all recovery activities.

All personnel dispatched into hazardous areas, radiological or otherwise, during the recovery phase are authorized by the Recovery Plant Manager. The dispatch of personnel is coordinated through the applicable organizational structure (recovery or normal plant organization depending on the extent of the recovery).

2. Recovery: Recovery is defined as those steps taken to return the plant to its pre-accident condition. The Emergency Director, with concurrence from the Emergency Offsite Manager and the Emergency Plant Manager, has the responsibility for determining when an emergency situation is stable and the Station is ready to enter the recovery phase. Prior to terminating an emergency and entering the recovery phase, the following conditions are considered:

- Do conditions still meet an Emergency Action Level? If so, does it appear unlikely that conditions will deteriorate?
- Radioactive releases are under control and are no longer in excess of Technical Specification limits.
- The radioactive plume has dissipated and plume tracking is no longer required. The only environmental assessment activities in progress are those necessary to assess the extent of deposition resulting from passage of the plume.
- In-plant radiation levels are stable or decreasing, and acceptable, given the plant conditions.
- The potential for uncontrolled radioactive release is acceptably low.
- The reactor is in a stable shutdown condition and long-term core cooling is available.
- Drywell pressure is within Technical Specification limits.
- Any fire, flood, earthquake or similar emergency condition no longer exists.
- All required notifications have been made.
- Discussions have been held with Federal, Commonwealth and local agencies and agreement has been reached to terminate the emergency.
- At an Alert or higher classification (non-transitory classification), the Emergency Response Organization is in place and emergency facilities are activated.

## PNPS EMERGENCY PLAN

- Any contaminated injured person has been treated and/or transported to a medical care facility.
- Offsite conditions do not unreasonably limit access of outside support to the station.

It is not necessary that all conditions listed above be met; however, all items must be considered prior to entering the recovery phase. For example, it is possible after a severe accident that some conditions remain which exceed an Emergency Action Level, but entry into the recovery phase is appropriate.

Once the decision is made to enter the recovery phase, the extent of the staffing required for the PNPS Recovery Organization is determined.

- For events of a minor nature, (i.e. for UNUSUAL EVENT classifications) the normal on shift organization is normally adequate to perform necessary recovery actions.
- For events where damage to the plant has been significant, but no offsite releases have occurred and/or protective actions were not performed, (i.e. for ALERT classifications) the PNPS Emergency Response Organization, or portions thereof, should be adequate to perform the recovery tasks prior to returning to the normal Station organization.
- For events involving major damage to systems required to maintain safe shutdown of the plant and offsite radioactive releases have occurred, (i.e. for SITE AREA EMERGENCY or GENERAL EMERGENCY classifications) the PNPS Recovery and Corporate organization is put in place.

The specific members of the PNPS Recovery organization are selected based on the sequence of events that preceded the recovery activities as well as the requirements of the recovery phase. The basic framework of the PNPS Recovery Organization is as follows:

- a. The Recovery Director is charged with the responsibility for directing the activities of the PNPS Recovery organization. These responsibilities include:
  - Ensuring that sufficient personnel from PNPS and other organizations are available to support recovery.
  - Directing the development of a recovery plan and procedures.
  - Ensuring that adequate engineering activities to restore the plant, are properly reviewed and approved.
  - Deactivating any of the PNPS Emergency Response Organization which was retained to aid in recovery, in the appropriate manner. Depending upon the type of accident and the onsite and offsite affects of the accident, portions of the PNPS Emergency Response Organization may remain in place after initiation of the recovery phase.
  - Coordinating the integration of available Federal and Commonwealth assistance into onsite recovery activities.
  - Coordinating the integration of PNPS support with Federal, Commonwealth and local authorities into required offsite recovery activities.

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- Approving information released by the public information organization which pertains to the emergency or the recovery phase of the accident.
- Determining when the recovery phase is terminated.

The Senior Nuclear Officer or a designated alternate is the Recovery Director.

b. The Recovery Plant Manager reports to the Recovery Director and is responsible for:

- Coordinating the development and implementation of the recovery plan and procedures.
- Directing all onsite activities in support of the recovery of PNPS.
- Designating other PNPS recovery positions required in support of onsite recovery activities.

The Plant Manager or a designated alternate will become the Recovery Plant Manager.

c. The Recovery Offsite Manager reports to the Recovery Director and is responsible for:

- Providing liaison with offsite agencies and coordinating PNPS assistance for offsite recovery activities.
- Coordinating PNPS ingestion exposure pathway EPZ sampling activities and the development of an offsite accident analysis report.
- Developing a radiological release report.
- Designating other PNPS recovery positions required in support of offsite recovery activities.

A senior Nuclear Assessment Group Management individual or a designated alternate is the Recovery Offsite Manager.

d. The Company Spokesperson reports to the Recovery Director and is responsible for:

- Functioning as the official spokesperson to the press for PNPS on all matters relating to the accident or recovery.
- Coordinating non-PNPS public information groups (Federal, Commonwealth, local, etc.).
- Coordinating media monitoring and rumor control.
- Determining what public information portions of the PNPS Emergency Response Organization will remain activated.

A senior PNPS management individual is designated as the Company Spokesperson.

The remainder of the PNPS Recovery Organization is established and an initial recovery plan developed at the end of the emergency phase or just after entry into the recovery phase. Consideration is given to recovery activity needs and use of the normal PNPS organizations. Individual recovery supervisors may be designated in any or all of the following areas:

- Training

## PNPS EMERGENCY PLAN

- Radiation Protection
  - Chemistry
  - Technical Support
  - Engineering Support
  - Quality Assurance
  - Operations
  - Security
  - Maintenance
  - Special Offsite Areas (Community Representatives, Environmental Samples, Investigations, etc.)
3. Recovery Phase Notifications: When the decision is made to enter the recovery phase, all members of the PNPS Emergency Response Organization are informed of the change. All personnel in the PNPS Nuclear Organization are instructed of the PNPS Recovery Organization and their responsibilities to the recovery effort.
4. Total Population Exposure: A method has been developed for estimating the total population exposure resulting from the accident. Total population exposure calculations are performed during the recovery phase of an accident. Cumulative data are collected from PNPS Emergency Response Organization records and release pathway filter analyses to estimate the source term. Data are obtained from offsite agencies to estimate the total exposed population. Environmental TLDs will be analyzed to provide additional data.



# PNPS EMERGENCY PLAN

## Section N: Drill and Exercise Program

This section describes the Drill and Exercise Program that PNPS has implemented to:

- Verify the adequacy of the Pilgrim Nuclear Power Station (PNPS) Emergency Preparedness Program.
- Develop, maintain and evaluate the capabilities of the PNPS Emergency Response Organization to respond to emergency conditions and safeguard the health and safety of Station personnel and the general public.
- Identify deficiencies in the PNPS Emergency Plan and the associated procedures, or in the training of response personnel, and ensure that they are promptly corrected.
- Ensure the continued adequacy of emergency facilities, supplies and equipment, including communications networks.

### 1. Exercises

- a. Exercises are conducted annually which involve implementation of the participants' emergency plan(s) and activation of major portions of participating emergency organizations. Where full participation by offsite agencies occurs, the sequence of events simulates an emergency that results in the release of radioactivity to the offsite environs, sufficient in magnitude to warrant a response by offsite authorities. For exercises involving only partial participation by these agencies, emphasis is placed on development and conduct of an exercise that is more mechanistically and operationally realistic. Players will be able, by implementing appropriate procedures and corrective actions, to determine the outcome of the scenario to a greater extent than when core damage and the release of radioactivity are prerequisites for demonstration of all objectives.
- b. Exercises provide an opportunity to evaluate the ability of participating organizations to implement a coordinated response to postulated emergency conditions. In accordance with the PNPS Six-Year Exercise Plan, exercises are conducted to ensure that all major elements of the emergency plan and preparedness program are demonstrated at least once in each six-year period. At least one exercise every six years is started between 6:00 p.m. and 4:00 a.m. Exercises are scheduled to be conducted at different times of the year. An unannounced drill/exercise is included in the Six-Year Plan.

2. Drills: In addition to the exercises described above, PNPS conducts drills for the purpose of testing, developing and maintaining the proficiency of emergency responders. Drills are scheduled in the PNPS Annual Drill Plan, which contains provisions for the following drills:

- a. Communication Drills: Communications capabilities with the Commonwealth of Massachusetts and local emergency operating centers, (Carver, Kingston, Duxbury, Marshfield, and Plymouth) are tested monthly.

Operability of communication equipment between PNPS and the State of Rhode Island are tested quarterly.

Communications between PNPS and the PNPS Radiological Monitoring Teams are tested annually.

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Other communication checks/drills are conducted in accordance with 10CFR50, Appendix E.IV.E.

Each of these drills includes provisions to ensure that all participants in the test are able to understand the content of the messages (e.g. by requesting repeat-backs of information or verification of message transmittal forms).

- b. Fire Drills: Drills for the PNPS Fire Brigade are conducted in accordance with Nuclear Organization and Station procedures.
- c. Medical Emergency Drills: Medical emergency drills, involving an individual who is simulated to be injured and contaminated, are conducted at least annually. These drills include participation by an ambulance service and at least one hospital who has agreed to provide assistance to PNPS in the event of an emergency at the Station.
- d. Radiological Monitoring Team Drills: Radiological Monitoring Team (RMT) drills are conducted at least annually and include provisions for the collection and analysis of environmental sample media (e.g. water, snow, vegetation, soil, and air), and the monitoring of radiological conditions outside the PNPS Protected Area. These drills include provisions for communications and record keeping.
- e. Health Physics Drills: At least semi-annually, drills are conducted which involve response to, and analysis of, simulated airborne and liquid samples with elevated levels of activity. These drills also involve direct measurements of radiation levels in the Station. Normal station health physics rules and procedures are followed.

At least annually, drills are conducted which involve use of the Post-Accident Sampling System (PASS) to obtain fluid samples for use in assessing the extent of core/cladding damage. These drills involve the simulated drawing and transport of a PASS sample and are scheduled so that each of the five potential sample points is tested at least once in each six year period.

- f. Augmentation Drills: At least semi-annually, drills are conducted to test the ability to augment the on-shift organization. These drills are conducted using the following methods:
  - Activation of the Computerized Automated Notification system (CANS) with responders calling in their anticipated arrival times and phone callouts being performed. The computer printout and Call Tree data sheets are then checked to confirm that the PNPS Emergency Response Organization could have been activated in a reasonable amount of time.
  - Activation of CANS, with actual response to Emergency Response Facilities.
- g. Combined Functional Drills: Periodically, drills are conducted to test the interfacility coordination, communication, and operation of the onsite emergency facilities including the EOF, TSC, OSC, Media Center, and Corporate Emergency Center.

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3. Conduct of Drills and Exercises: For each emergency preparedness exercise or drill conducted, a scenario package is developed which includes at least the following information:
- The objectives to be demonstrated during the drill or exercise,
  - Evaluation criteria to be used in determining the success of the drill or exercise,
  - Date(s), time(s), and place(s) of postulated events,
  - Scope of the drill or exercise and list of participating organizations,
  - The simulated sequence of events and the estimated schedule for major events
  - A narrative summary which includes at least the following information:
    - Events that are postulated to occur
    - Extent of simulation (e.g. will protective clothing be worn or simulated? Will offsite support be simulated? To what extent will the public information organization be exercised?)
    - Briefing materials to be provided to official observers and information on arrangements made for them.

Prior approval of appropriate PNPS management is obtained for all drills and exercises conducted in support of the Emergency Preparedness Program.

4. Criteria and Evaluation: At the conclusion of each drill or exercise, a critique is conducted to evaluate the ability of the participants to implement the PNPS emergency plan and procedures. For off-year annual exercises involving only partial participation by offsite agencies, PNPS conducts a full, self-evaluation of exercise activities; NRC representatives may be requested to observe these exercises. For full participation exercises, conducted at least biennially, both the NRC and FEMA will observe and evaluate.
5. Resolution of Drill and Exercise Findings: The critique and evaluation process is used to identify areas of the PNPS emergency preparedness program which require improvement. The Nuclear Assessment Director or his designee is responsible for evaluation of all recommendations and comments, and the determination regarding which of the items is to be incorporated into the Emergency Preparedness Program. Items identified for incorporation will be tracked through resolution using the appropriate station action tracking system.

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## **Section O: Emergency Response Training**

This section describes the emergency response training that is provided to those who may be called upon in an emergency. It outlines the training provided by PNPS to both its employees and offsite support personnel requiring site access.

1. **Assurance of Training:** PNPS assures the training of appropriate company personnel through implementation of the Emergency Organization Training portion of the PNPS Nuclear Training Manual. The required training for the PNPS Emergency Response Organization (ERO) positions that are defined in Section B is described here.

Offsite training is provided to support organizations who may be called upon to provide assistance in the event of an emergency. The following outlines the training received by these organizations:

- a. Specialized training is offered to the following offsite agencies who may be called upon to provide onsite assistance in the event of an emergency:
  - Plymouth Fire Department
  - Plymouth Police Department
  - American Medical Response Ambulance Service

Training consists of the following:

- Notification Process Training
- Site Orientation Training
- Basic Radiation Protection Training
- Specific Interface Training

In addition, the individual in the PNPS Emergency Response Organization who controls the support activities is identified by position and title. These courses do not qualify offsite personnel for unescorted access. Escorts are provided to assist support personnel.

- b. PNPS offers training support, as requested, for Commonwealth and local agencies whose function is to provide assistance during an emergency at PNPS. Training is offered on an annual basis, or as needed.
2. **Classroom and Hands-On Training:** Members of the PNPS Emergency Response Organization receive general and specialized classroom and hands-on emergency response training. Hands-on training is provided using one or more of the following methods:
    - Familiarization Sessions: A familiarization session is an informal, organized tabletop discussion of predetermined objectives.
    - Walk Throughs: Consists of a facility walk through to familiarize PNPS Emergency Response Organization personnel with procedures, communications equipment and facility layout. Walk throughs also provide the opportunity to discuss facility activities, responsibilities and procedures with an instructor.

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- Drills: A drill is a supervised instruction period aimed at testing, developing and maintaining skills in a particular operation. Drills described in Section N of this Plan are a part of training. These drills allow each individual to demonstrate ability to perform assigned emergency functions. During drills, on-the-spot correction of erroneous performance may be made and a demonstration of the proper performance offered by the Controller.
3. First Aid Response: On-shift EMT personnel are trained to respond to medical emergencies.
  4. PNPS Emergency Response Organization Training Program: PNPS Emergency Response Organization personnel who are responsible for implementing this Plan receive initial, specialized and annual requalification training. Table O-1 is a sample training matrix. The detailed training matrix is maintained in the PNPS Nuclear Training Manual.

Commonwealth and local EOC personnel receive training as outlined in the MEMA Training Program for the PNPS Emergency Planning Zone, with support provided by PNPS.

PNPS emergency response position assignments are based upon an individual's normal daily function and area(s) of expertise. Position-specific training provides the individual with the skills and knowledge to satisfactorily perform emergency assignments.

New PNPS Emergency Response Organization personnel receive an initial overview course which familiarizes them with the Plan by providing basic information in the following areas as well as specific information as delineated in the sections below:

- Planning Basis
- Emergency Classifications
- PNPS Emergency Response Organization and Responsibilities
- Callout of Emergency Organization
- Emergency Response Facilities
- Communications Protocol/Emergency Public Information
- Offsite Organizations

Annual requalification training is provided to ensure personnel are informed of changes in the Plan, procedures, organization and facilities.

- a. Personnel Responsible for Management of an Emergency

Emergency Director, Emergency Offsite Manager, Emergency Plant Manager

These positions receive specialized training in the areas of:

- Notifications
- Emergency Classifications
- Protective Action Recommendations

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- Emergency Action Levels
- Emergency Exposure Control

- b. Personnel Responsible for Accident Assessment: The skills and knowledge required to perform plant stabilization and mitigation are a normal function of specific Nuclear Operation's positions, as identified in Section B of this Plan. Power changes, planned and unplanned reactor shutdowns are handled on a normal operation basis. Subsequent plant stabilization and restoration is pursued utilizing normal operating procedures. Licensed Nuclear Plant Operators receive routine classroom and simulator training to ensure proficiency in this area.

To remove peripheral duties from the Nuclear Operations shift, those Emergency Organization positions responsible for accident assessment, corrective actions, protective actions, and related activities receive training as follows:

Core Damage Assessment: During an emergency when core/cladding damage is suspected, a specialized group of trained individuals perform core damage assessment.

At a minimum, personnel responsible for core damage assessment receive classroom and hands-on training in the following areas:

- Isotopic Assessment and Interpretation
- Available Instrumentation and Equipment
- Computerized and Manual Core Damage Assessment

Post Accident Sampling: Post accident sampling and analysis is performed by Radio - Chemistry Technicians who receive the following specialized training:

- Post Accident Sampling Overview
- Operation of the Post Accident Sampling System (PASS)
- Post Accident Sample Analysis

- c. Radiological Monitoring Teams and Radiological Analysis Personnel

Offsite Radiological Monitoring Offsite radiological monitoring is performed by trained individuals who provide samples and direct readings for dose assessment calculations.

Radiological Monitoring Team (RMT) members receive classroom and hands-on training in the following areas:

- Equipment and Equipment Checks
- Communications
- Plume Tracking Techniques

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Personnel Monitoring: Personnel monitoring is performed by trained individuals who monitor Station personnel and their vehicles for contamination during an emergency.

Personnel Monitoring Team members receive classroom and hands-on training in the following areas:

- Personnel Monitoring Equipment and Techniques
- Decontamination Techniques for Personnel
- Decontamination Techniques for Vehicles

Dose Assessment: Dose Assessment training includes the skills and knowledge necessary for calculation and interpretation of an offsite release and its impact on the environment under any meteorological condition. Individuals responsible for performing dose assessment are trained in the following areas:

- Computerized and Manual Dose Assessment
- Protective Action Recommendations
- Radiological Monitoring Team Interface
- Protective Action Guidelines associated with offsite plume exposure doses
- Basic Meteorology

d. Police, Security and Fire Fighting Personnel

Local Police and Fire Fighting Personnel: The Plymouth Police and Fire Departments are invited to receive training as outlined in Part 1.a of this section.

Security: The PNPS emergency security response is based upon a normal daily security function which is to safeguard the site. Security personnel receive specialized training in the following areas:

- Accountability
- Evacuation
- Search and Rescue
- Emergency Response Facility Activation and Access Control
- Radiation Protection for Security Outpost

Additionally, security management receive specialized training in the areas of:

- Interfacing with Outside Support
- Organizational Interface

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Onsite Fire Fighting Personnel: Onsite fire fighting personnel are selected from the Operations and Security sections and receive their emergency response training as part of those groups.

- e. Repair and Damage Control/Corrective Action Teams: Repair and damage control team members receive emergency team training specific to reentry.
- f. First Aid and Rescue Personnel: First aid and rescue team members receive training as outlined in Part 3 of this section.
- g. Local Support Service Personnel: Local support service personnel providing assistance during an emergency are invited to receive training as outline in Parts 1.a and 1.b of this section.
- h. Medical Support Personnel: Onsite medical personnel receive specialized training in the handling of contaminated victims and hospital interface.
- i. Corporate Support Personnel

*Public Information:* Corporate and PNPS personnel responsible for disseminating emergency public information and responding to media and public information requests receive specialized public information training.

*Corporate Emergency Response:* Corporate personnel responding to requests from Pilgrim Station receive training in the following areas:

- Pilgrim Station Emergency Plan
  - PNPS/Entergy Nuclear Corporate Radiological Emergency Plan
- j. Communications Personnel: PNPS Emergency Response Organization personnel receive training on communications protocol as a part of the initial Emergency Response Overview Course. Personnel using specialized communications equipment that is not part of their normal daily function receive initial and requalification training on the equipment. Personnel involved in notifications to offsite agencies receive specialized training in the notification process.
5. General, Initial and Annual Training Program Maintenance
- a. General Employee Training (GET): GET provides initial training and annual requalification training on the basic elements of the PNPS Emergency Plan for all personnel working at PNPS. These elements include:
    - Station emergency alarms and their meaning
    - Assembly areas
    - Site evacuation procedure
    - Special precautions and limitations during an emergency



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- Purpose of the PNPS Emergency Plan
  - Role of the worker during an emergency
  - Related industry events
- b. Initial Training: Prior to becoming a qualified PNPS Emergency Response Organization member, personnel receive a first-time course that provides introductory knowledge to new members of the organization. PNPS provides initial emergency response overview and specific training to assigned PNPS Emergency Response Organization members as outlined in the Emergency Organization Section of the PNPS Nuclear Training Manual. Additionally, PNPS offers initial training to those offsite organizations who provide onsite support, as discussed in Part 1.a of this Section.

When a PNPS employee successfully completes the training requirements for an assigned emergency position, training is documented and the employee's name placed in the PNPS Emergency Telephone Directory. The completed training documents certify that the individual is qualified to perform their emergency functions.

- c. Requalification Training: Annual requalification training is provided to PNPS Emergency Response Organization personnel. Requalification training consists of one or more of the following:
- Annual Requalification Test
  - Classroom and/or hands-on training addressing changes to the PNPS Emergency Response organization, facilities, procedures and equipment
  - Drill participation
- d. Update Training: In some cases, it may be necessary to provide additional training prior to the annual requalification training. Changes to this Plan, PNPS Emergency Response Organization, procedures, facilities or equipment may require training in an effort to maintain a proficient PNPS Emergency Response Organization.

Program changes or deficiencies identified during drills, exercises or audits may require training to be performed prior to annual requalification training. Emergency Preparedness management evaluates the impact of these changes or deficiencies upon the effectiveness of the organization. As a result of this evaluation process, one or more of the following may occur:

- Specialized Classroom Training
- Hands-On Training
- Required Reading
- Drills

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Table O-1a: Emergency Preparedness Training Modules Sample Matrix

Module	Curriculum File No.	Module Title
01	T-CM-02-05-01	PASS Overview
09	T-ER-01-01-09	Senior Emergency Management Training
10	T-ER-01-01-10	Emergency Response Organization Overview
11	T-ER-01-01-11	Ops Specific
12	T-EP-01-01-12	Termination and Recovery
13	T-ER-01-01-13	Public Information
15	T-ER-01-01-15	Contaminated Injured Person
16	T-EP-01-01-16	Hospital Interface
20	T-ER-01-01-20	General Overview (Abbr.)
30	T-ER-01-01-30	Classifications
38	T-ER-01-01-38	Summary PASS/Core Damage
41	T-EP-01-01-41	Reentry Management
43	T-ER-01-01-43	Radiation Monitoring Teams
48	T-ER-01-01-48	Personnel Monitoring
50	T-EP-01-01-50	Communications/Notification
51	T-ER-01-01-51	CANS
57	T-EP-01-01-57	DNN/BECONS
58	T-ER-01-01-58	Security
62	T-EP-01-01-62	TSC Walk Through
63	T-ER-01-01-63	OSC Walk Through
64	T-ER-01-01-64	EOF Walk Through
67	T-ER-01-01-67	Media Center Walk Through
70	T-ER-01-01-70	Core Damage
80	T-EP-01-01-80	Dose Assessment
81	T-ER-01-01-09	Sr. Emergency Management Training
85	T-ER-01-01-85	SPDS
99	T-ER-01-01-99	Special Training (Procedure Read & Sign)

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Table O-1b: Emergency Response Organization Training Requirements Sample Matrix

Position	Module #	Training Required
Dose Assessment Engineer	10 80/60 43	Overview Dose Assessment/PARs RMT
Electrical Engineer	10	Overview
Electrical Pool	10	Overview
Electrical Supervisor	10	Overview
Emergency Communications Supv	10 50 57	Overview Communications/Notifications DNN/BECONS
Emergency Director	09	Senior Emergency Management Training
Emergency Director Admin Asst.	10	Overview
Emergency Offsite Manager	09	Senior Emergency Management Training
Emergency Offsite Mgr. Admin Asst.	10	Overview

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## **Section P: Responsibility for the Maintenance of the Planning Effort**

This section describes the responsibilities for development, review and distribution of the Pilgrim Nuclear Power Station (PNPS) Emergency Plan and actions which must be performed to maintain the PNPS Emergency Preparedness Program. It also outlines the criteria for insuring that personnel who perform the planning are properly trained.

### **Emergency Preparedness Staff.**

1. At least once each calendar year all members of the Emergency Preparedness staff are involved in at least one of the following activities:
  - Training courses specific to emergency preparedness.
  - Training courses related to emergency preparedness management, such as problem solving, stress management or confrontation/media relations courses.
  - Observation of or participation in drills and/or exercises at other utilities.
  - Participation in industry review and evaluation programs.
  - Participation in regional or national emergency preparedness seminars, committees, workshops or forums.
  - PNPS training courses in related areas, such as systems, operations, or radiological protection training.
  
2. **Authority for Emergency Preparedness Effort:** The Senior Nuclear Officer has overall authority and responsibility for the PNPS Emergency Preparedness Program. This includes the authority to provide the necessary resources to ensure the continuous state of readiness for the PNPS Emergency Response Organization.
  
3. **Nuclear Assessment Director:** The Nuclear Assessment Director is responsible for the maintenance of the PNPS Emergency Preparedness Program. In maintaining the program, the Nuclear Assessment Director ensures the following:
  - Development, maintenance and revision of the PNPS Emergency Plan and implementing procedures is accomplished in accordance with applicable regulations and industry standards.
  - Ensures the proper amount of PNPS and CEPG support is provided to ensure the maintenance of offsite emergency response plans and procedures for the Commonwealth of Massachusetts and the local communities involved in response to an incident at Pilgrim Station.
  - The training program for offsite response personnel is properly supported by PNPS.
  - Development and maintenance of a strong working relationship with Commonwealth and local authorities responsible for Emergency Preparedness.
  - Consistency is maintained between this plan and its implementing procedures and the emergency plans and procedures of the Commonwealth and local authorities.
  - Preparation for and conduct of the Station's drill and exercise program, and ensuring the program meets all regulations and guidelines of the NRC.

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- Emergency Response Facilities are maintained in a constant state of readiness.
- Appropriate files are maintained to document the activities of the Emergency Preparedness Program as required by law and regulations.
- Development and implementation of the Emergency Preparedness Public Information program.
- PNPS is appropriately represented at Commonwealth and local meetings by a representative empowered to represent PNPS in emergency preparedness matters.
- Preparation of reports to the NRC, FEMA and other agencies on emergency preparedness matters.
- Alert and notification systems are maintained and tested in accordance with approved procedures.
- Pilgrim Station and Contingency Management Services staff are involved in a program to maintain sufficient knowledge of state of the art planning techniques and the latest applications of emergency equipment and supplies.
- Emergency Preparedness staff provides technical assistance to other PNPS organizations in areas of emergency preparedness.
- Adequate PNPS and CEPG EP staff support is provided to support Pilgrim and Offsite emergency response plans.

The Nuclear Assessment Director is assisted in these responsibilities by the following Emergency Preparedness staff.

### Emergency Preparedness Staff

- a. The Emergency Preparedness Superintendent is responsible for the development, implementation, and maintenance of the PNPS Emergency Preparedness Program. Specifically, this position is responsible for:
  - Overseeing the development and maintenance of this Plan and its implementing procedures while ensuring that regulatory guidance and industry standards are met.
  - Reviewing the Emergency Preparedness Training Program, including review of lesson plans.
  - Developing and conducting drills and exercises to maintain the state of readiness of the PNPS Emergency Preparedness Program.
  - Developing and maintaining administrative procedures and manuals required to assure the maintenance of the PNPS Emergency Preparedness Program.
  - Ensuring the resolution of emergency preparedness deficiencies discovered through drills, audits, and training.
  - Interfacing with Nuclear Training to ensure that an adequate number of personnel are trained and qualified to respond to an emergency at PNPS.
  - Coordinating the development and annual distribution of the public information publication.
  - Maintaining the PNPS Emergency Telephone Directory.

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- Maintaining emergency radio and telephone communications systems between PNPS and offsite emergency response facilities including the Prompt Alert and Notification System (PANS).
  - Maintaining an emergency preparedness activity tracking system.
  - Maintaining PNPS emergency response facilities.
  - Providing assistance to local and Commonwealth officials in their emergency plan/procedure development and revision efforts.
  - Assisting in the development, implementation and revision of the local and Commonwealth training program.
  - Scheduling the conduct of the biennial exercise in cooperation with local and Commonwealth officials.
  - Coordinating with the Onsite Emergency Preparedness program to ensure consistency with the emergency plans and procedures of the Commonwealth and local authorities.
  - Assessing the completion and quality of any work performed by Centralized Emergency Planning Group.
- b. The Senior Emergency Planner (Readiness Coordinator) is responsible for the operational maintenance and readiness of Pilgrim Emergency program. Specifically this position:
- Audits the Emergency Preparedness Training Program and provides staff support as required to ensure quality Emergency Organization Training.
  - Acts as a training coordinator for the Offsite Emergency Preparedness Training Program regarding onsite interface.
  - Assists in developing training materials for the Local and Commonwealth Radiological Emergency Preparedness Training Programs.
  - Analyzes manpower needs and implements necessary actions to ensure sufficient resources are available to maintain the Emergency Preparedness Program.
  - Supervises the construction, maintenance, and surveillance of the local emergency operation centers and reception centers.
  - Acts as the PNPS Manager in charge of Pilgrim Station's emergency communications equipment.
  - Oversees and directs Pilgrim Nuclear Power Station's emergency communications equipment.
  - Oversees the operational readiness of PNPS emergency response Facilities (i.e., Emergency Operations Facility (EOF), Operations Support Center (OSC), Technical Support Center (TSC), Media Center (MC), Alternate Emergency Operations Facility (AEOF), Alternate Media Center (AMC), and Personnel Processing Center (PPC).
  - Oversees the maintenance of the emergency preparedness activity tracking systems.
  - Maintains an effective interface with the Centralized Emergency Planning Group to ensure the quality completion of work performed by CEPG.

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- Oversees the development and maintenance of the Nuclear Organization Emergency Notification List (ENL).
  - Oversees the maintenance and readiness of Station Prompt Alert Notification System (Sirens).
  - Acts as Lead Controller for, and develops and conducts the Station Drill and Exercise Program.
  - Investigates and develops summary reports for incidents at the Station classifiable in accordance with the Station's Emergency Plan (i.e., Notification of Unusual Event, Alert, and higher).
- c. The Senior Emergency Planner (Planning Coordinator) is responsible for all Pilgrim and related Offsite emergency planning programs. Specifically this position:
- Oversees the development and maintenance of the Pilgrim Nuclear Power Station Emergency Plan and Implementing Procedures.
  - Ensures that the Pilgrim Nuclear Power Station Emergency Plan and Procedures are maintained and consistent with related Commonwealth and local Emergency Response Plans and Procedures.
  - Coordinates the development and maintenance of administrative procedures and manuals required to assure the maintenance of the Station's Emergency Preparedness Program.
  - Coordinates the development and maintenance of the Corporate Radiological Emergency Plan.
  - Ensures that the Emergency Public Information Program is developed and maintained to achieve consistency and compatibility with the Pilgrim Nuclear Power Station program.
  - Supervises the Offsite Emergency Preparedness activities in providing assistance to local and Commonwealth officials in their emergency plan development and revision efforts.
  - Oversees local and Commonwealth training program development, implementation, and revision.
  - Coordinates the review and distribution of the Emergency Public Information and notification materials.
  - Ensures compliance with terms of Local Civil Defense Grant agreements between the Company and towns.
  - Establishes and maintains liaison with elected and appointed local and Commonwealth officials by representing the PNPS Emergency Preparedness Department at meeting and functions.
  - Ensures that the Emergency Preparedness Superintendent is aware of trends and relationships in community activities and actions.
  - Participates in the development and implementation of strategies associated with Offsite Emergency Preparedness programs that are responsive to current emergency preparedness regulations.

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- Develops and maintains with the State of Rhode Island Emergency Management Agency Radiological Emergency Plans and Procedures for the Ingestion Pathway.
- Maintains an effective interface with and provides daily supervision of assigned personnel from the Centralized Emergency Planning Group (CEPG) to ensure the quality completion of work performed by CEPG.

The Senior Emergency Planner (Readiness Coordinator) and Senior Emergency Planner (Planning Coordinator) report to the Emergency Preparedness Superintendent.

Members of Emergency Preparedness Department and Contingency Management Services Group are selected based on qualifications that meet those outlined in position Job Descriptions which are maintained in Emergency Preparedness files.

4. PNPS Emergency Plan Revisions: This plan is reviewed and updated as necessary, on an annual basis. The annual update includes required changes identified during training, drills and exercises. The Nuclear Assessment Director is responsible for determining which recommended changes are incorporated into the Plan.

Revisions to the Plan are reviewed by the Operations Review Committee (ORC) and all organizations affected by the change prior to approval.

Changes to the Plan are made without NRC approval only if such changes do not decrease the effectiveness of the Plan, and the Plan as changed continues to meet the standards of 10CFR50.47(b) and 10CFR50, Appendix E, and other licensing documents. Proposed changes that decrease or have a potential to decrease the effectiveness of the approved Plan are not implemented without prior approval by the NRC.

5. Emergency Plan Distribution: Controlled copies of the PNPS Emergency Plan are issued to all appropriate organizational heads in the PNPS Nuclear Organization, the Commonwealth of Massachusetts and the Nuclear Regulatory Commission. Controlled copies of the Plan and Implementing Procedures are also provided in all appropriate Emergency Response Facilities. An Emergency Preparedness Administrative Procedure (in conjunction with Station Procedures) controls the distribution of changes to the Plan. Procedure requirements include use of revision bars and required page identifications (i.e. section of plan, revision number, etc.).
6. Supporting Emergency Response Plans: Other plans which support this Plan are:

- Federal Radiological Emergency Response Plan
- Commonwealth of Massachusetts Radiological Emergency Response Plan
- Commonwealth of Massachusetts Radiological Emergency Response Plan Area II
- Town of Plymouth Radiological Emergency Response Plan
- Town of Carver Radiological Emergency Response Plan
- Town of Duxbury Radiological Emergency Response Plan
- Town of Kingston Radiological Emergency Response Plan
- Town of Marshfield Radiological Emergency Response Plan



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- Town of Bridgewater Radiological Emergency Response Plan
- Town of Braintree Reception Community Radiological Emergency Response Plan
- City of Taunton Radiological Emergency Response Plan
- State of Rhode Island Nuclear Power Plant Incident Ingestion Exposure Pathway Emergency Response Plan
- Duke Engineering & Services Emergency Mutual Assistance Agreement
- Duke Engineering & Services Emergency Support Plan

Each of these plans has associated Implementing Procedures.

7. Implementing and Supporting Procedures: Appendix 2 of this Plan contains a listing, by number and title, of those procedures which implement this Plan during an emergency. Administrative procedures which outline the steps taken to maintain the PNPS Emergency Preparedness Program have been developed. All Emergency Plan Implementing Procedures and safety related supporting procedures are reviewed annually at a minimum.

Revisions to the procedures are reviewed by the departments affected (i.e. departments to whom responsibilities are assigned or changed) prior to their approval. Implementing procedures are reviewed and approved in accordance with Technical Specifications.

8. Cross Reference to Planning Criteria: The Plan is formatted in the same manner as NUREG-0654, FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in support of Nuclear Power Plants", Revision 1. This allows for ease in auditing evaluation criteria and eliminates the need for a cross-reference.
9. PNPS Emergency Preparedness Program Review: The Nuclear Assessment Director ensures that a review is performed on the PNPS Emergency Preparedness Program in accordance with the PQAM Volume II. This review is performed by a competent organization, either internal or external to PNPS, which has not been involved in maintenance of the Program for at least two years. Included in the review are the following:
  - The PNPS Emergency Plan and associated implementing procedures.
  - The Emergency Preparedness Training Program.
  - The readiness of the PNPS Emergency Response Organization to perform its function.
  - The readiness of facilities and equipment to perform as outlined in the Plan and procedures.
  - The interfaces between the Station, the Commonwealth and local governmental agencies pertaining to the overall PNPS Emergency Preparedness Program.

Results of this review are submitted for review to the PNPS Nuclear Safety Review and Audit Committee and the Senior Nuclear Officer. The Nuclear Assessment Director ensures that any findings which deal with offsite interfaces are reviewed with the appropriate agencies. Records of the review are maintained for at least five years.

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10. Maintenance of PNPS Emergency Telephone Directory: The PNPS Emergency Telephone Directory contains telephone numbers used by the PNPS Emergency Response Organization during an emergency. An Emergency Preparedness Administrative Procedure provides for verifying and updating these numbers at least quarterly.
11. Assessment of the Centralized Emergency Preparedness Group: The Nuclear Assessment Director ensures an annual assessment is performed on the Emergency Preparedness work performed by the Centralized Emergency Preparedness Group. Results of this assessment will be reviewed with Senior Nuclear Managers and Contingency Management Services Group Managers. The Nuclear Assessment Director ensures any findings are properly reviewed and addressed.

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## Appendix 1: References

1. 10CFR50.47, Emergency Plans
2. 10CFR50 Appendix E, Emergency Planning and Preparedness for Production and Utilization Facilities
3. 10CFR20, Standards for Protection Against Radiation
4. NUREG-0654, FEMA-REP-1, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants
5. NUREG-0696, Revision 1, Functional Criteria for Emergency Response Facilities
6. EPA-400-B-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents
7. FEMA-Guidance Memorandum, MS-1 "Medical Services"
8. PNPS FSAR
9. PNPS Tech Specs
10. Reg. Guide 1.101, "Emergency Planning & Preparedness for Nuclear Power Plants"
11. PNPS/Entergy Nuclear Corporate Radiological Emergency Plan (CREP)
12. 10CFR50, Appendix R
13. SANDIA 77-1725
14. PNPS Nuclear Training Manual
15. INPO Emergency Resources Manual
16. Nuclear Organization Procedure 88A4, "Assignment of Responsibilities in Support of the PNPS Emergency Preparedness Program"
17. Federal Radiological Emergency Response Plan (FRERP)
18. Interagency Radiological Assessment Program (IRAP)
19. PQAM
20. PNPS Offsite Dose Calculation Manual (ODCM)

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### Appendix 2: Procedure Cross-Reference to Sections of the Plan

Number	Title	PNPS Emergency Plan Section(s)
EP-IP-100	Emergency Classification and Notification	D.1, D.2, Table D-1, E.1, E.2, E.3, E.4, J.1
EP-IP-200	On-Call Emergency Director	B.2 B.3, B.4, Table B-1
EP-IP-201	Emergency Plant Manager	B.5, Table B-1
EP-IP-202	Company Spokesperson	B.5
EP-IP-210	Control Room Augmentation	B.5, Table B-1
EP-IP-220	TSC Activation and Response	B.5, Table B-1
EP-IP-229	TSC/OSC Equipment Operation	B.5, Table B-1
EP-IP-230	OSC Activation and Response	B.5, Table B-1
EP-IP-231	Onsite Radiation Protection	B.5, Table B-1
EP-IP-240	Emergency Security Organization Activation and Response	B.5, Table B-1
EP-IP-250	EOF Activation and Response	B.5, C.2.b, Table B-1
EP-IP-251	Offsite Radiation Protection	B.5, Table B-1
EP-IP-252	Facilities Support	B.5, Table B-1
EP-IP-253	Relocation of the EOF	H.2
EP-IP-254	Communication Support	B.5, F.1
EP-IP-259	EOF Equipment Operation	B.5, Table B-1
EP-IP-300	Offsite Radiological Dose Assessment	I.3, I.4
EP-IP-310	Radiation Monitoring Team Activation and Response	I.7, I.8, I.9
EP-IP-315	Offsite Personnel Monitoring Team Activation and Response	J.3
EP-IP-330	Core Damage	I.2
EP-IP-400	Protective Action Recommendations	E.3, J.7, J.8
EP-IP-410	Evacuation/Assembly	J.2, J.4, J.5, K.3
EP-IP-420	Search and Rescue	J.5
EP-IP-440	Emergency Exposure Controls	J.6, K.1, K.2
EP-IP-501	Transport of Contaminated Injured Personnel	K.5, L.1, L.4
EP-IP-520	Transition and Recovery	M.1, M.2, M.3, M.4
EP-PI-XXX	Emergency Public Information Procedure Set	G.3, G.4
EP-CP-XXX	Corporate Radiological Emergency Plan Procedure Set	A.1, B.7, C.4, O.4

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### Appendix 2: Procedure Cross-Reference to Sections of the Plan (Cont.)

Number	Title	PNPS Emergency Plan Section(s)
EP-AD-xxx	Emergency Preparedness Administrative Procedure Set	The following procedures do not implement the Emergency Plan, but do outline maintenance of the program for the applicable sections of the Plan.
EP-AD-100	Emergency Preparedness Controlled Documents	P.4
EP-AD-110	Emergency Preparedness Department Organization and Responsibilities	P.1, P.2, P.3
EP-AD-120	Emergency Preparedness Activity Scheduling System	N.5
EP-AD-122	Maintenance of the Emergency Telephone Directory	P.10
EP-AD-200	Planning and Scheduling of Drills and Exercises	N.1.b, N.2.a, N.2.c, N.2.e.1, N.2.e.2
EP-AD-201	Preparation, Conduct, and Evaluation of Emergency Preparedness Drills and Exercises	N.1.b, N.2.a, N.2.c, N.2.e.1, N.2.e.2
EP-AD-301	Emergency Preparedness Facilities and Equipment Surveillances	F.3, H.10
EP-AD-411	Testing of the CANS	E.1, E.2
EP-AD-412	Emergency Communications Test	F.3, N.2.a
EP-AD-421	Surveillance, Maintenance, and Calibration of the MeDAP Equipment	H.8
EP-AD-600	Emergency Action Levels Technical Basis Document	D.1, D.2, I.1, I.4, J.7

# PNPS EMERGENCY PLAN

## Appendix 3: Sample Copies of Letters of Agreements: Duke Engineering and Services Emergency Mutual Assistance Agreement Signature Page

### Addendum to DE&S Mutual Assistance Agreement

#### Entergy Nuclear Generation Company (Entergy Nuclear)

The undersigned company agrees to become a party to and be bound by all of the terms and conditions of the "DE&S Mutual Assistance Agreement" dated August, 1998 formerly agreed to by the Boston Edison Company upon the Nuclear Regulatory Commission's transfer of the operating license at Pilgrim Station and closure of the sale to Entergy Nuclear.

In addition, section G, Activation Protocol, part b, 4th bullet should be revised to read as follows: "Corporate Support Coordinator for Pilgrim Station".

Entergy Nuclear Generation Company

  
Corporate Officer Signature

4/5/99  
Date

# PNPS EMERGENCY PLAN

## Appendix 3: Sample Copies of Letters of Agreements: Jordan Hospital

### PNPS EMERGENCY PLAN

#### AGREEMENT

The Entergy Nuclear Generation Company (the "Company"), in preparing plans and procedures for the management of radiological emergencies at its Pilgrim Nuclear Power Station at Plymouth, Massachusetts, has made arrangements with the Jordan Hospital, Plymouth, Massachusetts for the reception and treatment of radiation accident cases. Jordan Hospital has agreed to designate a physician to consult on such cases. Cases of radiation exposure or contamination will be brought to the hospital and treated by the physician so designated or other members of the hospital staff which the hospital has asked to assist in primary or secondary care of the radiation cases.

The Company agrees to notify the Jordan Hospital of the occurrence of any such radiological emergency at Pilgrim Station prior to sending radiation cases to the hospital for treatment. The Company further agrees to transport these cases to the hospital in a manner specified by Jordan Hospital and to bring patients only to the section of the hospital designated and prepared to handle such radiation cases.

Prior to admitting these patients into the hospital, the Company will use its best efforts to evaluate the case and to carry out decontamination and first aid procedures which it deems necessary and which are within its capabilities.

All radiation accident cases for admission to the hospital will be accompanied by a Company representative who is knowledgeable and trained in radiation protection. These individuals will remain with the patient to assist the hospital in addressing its radiological concerns as long as necessary. Once the patient is admitted for medical treatment and the radiological concerns of the hospital have been addressed, the Company radiation protection representative's responsibilities shall be considered complete.

The Company agrees to provide supplies and equipment in the care and treatment of contaminated and injured personnel sent from Pilgrim Station. Reimbursement for material used in the course of treating contaminated and injured personnel from Pilgrim Station will be through the normal billing process. Whereas, in consideration of the hospital for care and treatment of simulated contaminated and injured personnel for training and drills, the Company agrees to reimburse the hospital for all medical supplies and equipment used in decontamination and treatment during such drills. Radiological supplies and equipment will be inventoried and replaced by the Company.

Nothing in this Agreement, nor any act of either the Company or the hospital, shall be deemed or construed by either of them, or by third persons, (1) to create any relationship whatsoever involving the Company including, but not limited to, employment, agency or contractor relationships between the Company and an employee or authorized representative of the hospital, or except as provided above, (2) to create any right on the part of the hospital or any third person with respect to the Company and its property.

This Agreement will become effective immediately upon the Nuclear Regulatory Commission's transfer of the operating license at Pilgrim Station and closure of the sale of Pilgrim Station to Entergy Nuclear.

Signed this 29<sup>th</sup> day of June, 1999.

Entergy Nuclear Generating Company

Jordan Hospital, Inc.

By [Signature]

By [Signature]

Its Vice President

Its President & CEO

# PNPS EMERGENCY PLAN

## Appendix 3: Sample Copies of Letters of Agreements: Morton Hospital

### ENTERGY NUCLEAR GENERATION COMPANY EXPENSE REIMBURSEMENT AGREEMENT

This agreement is entered into by and between Entergy Nuclear Generation Company (the "Company") and the Morton Hospital and Medical Center, Inc. (the "Contractor").

The Company intends to secure the purchase of and accept the transfer of the operating license of the Pilgrim Nuclear Power Station ("Pilgrim Station"), which is located in Plymouth, Massachusetts, and as such has an interest in the preparation and implementation of plans developed to respond to radiological emergencies at the Pilgrim Station.

The Contractor has agreed to participate in the Radiological Emergency Plan for the Pilgrim Station. Such participation will require that the Contractor or its employees, in coordination with various support agencies (i.e., Brewster Ambulance Service, Plymouth Fire Department) provide supplies and equipment in the care and treatment of contaminated and injured personnel sent from Pilgrim Station. Such participation includes training and drills.

Reimbursement for material used in the course of treating contaminated and injured personnel from Pilgrim Station will be through the normal billing process. Whereas, in consideration of the Contractor for care and treatment of contaminated and injured personnel for training and drills, the Company agrees to reimburse the Contractor for all medical supplies and equipment used in decontamination and treatment. Radiological supplies and equipment will be inventoried and replaced by the Company.

It shall be the responsibility of the Contractor to compile, review and approve in writing, all requests for payment of material and equipment described herein and to submit said requests to the Company on a monthly basis. All requests shall include the name(s) of individual(s) treated, reason (i.e., training, drill, medical treatment) and a list of all material used during treatment that has to be replaced. The Company shall make payment to the Contractor within forty-five (45) days of its receipt of the Contractor's request for payment.

The Contractor acknowledges that the obligation of the Company is limited to reimbursement of expenses in the manner and on the terms set forth in this Agreement. Nothing in this Agreement, nor any act of either the Company or the Contractor, shall be deemed or construed by either of them, or by third persons, (1) to create any relationship whatsoever involving the Company including, but not limited to, employment, agency or contractor relationships between the Company and an employee or authorized representative of the Contractor, or except as provided above, (2) to create any right on the part of the Contractor or any third person with respect to the Company and its property.

This Agreement will become effective immediately upon the Nuclear Regulatory Commission's transfer of the operating license at Pilgrim Station and closure of the sale of Pilgrim Station to the Entergy Nuclear Generating Company.

IN WITNESS WHEREOF the undersigned hereunto set their respective hands this  
5<sup>th</sup> day of April, 1999.

ENTERGY NUCLEAR GENERATING  
COMPANY

BY: MD Ballany

ITS: Vice President

MORTON HOSPITAL AND  
MEDICAL CENTER, INC.

BY: [Signature]

ITS: PRESIDENT



# PNPS EMERGENCY PLAN

## Appendix 3: Sample Copies of Letters of Agreements: Plymouth Police



### TOWN OF PLYMOUTH POLICE DEPARTMENT

20 Long Pond Road  
Plymouth, Massachusetts 02360  
FAX (508) 830-4227  
(508) 830-4218

TO: Jack Alexander, NPO  
Nuclear Assessment  
Pilgrim Nuclear Power Station

FROM: Robert J. Pomeroy  
Chief of Police

SUBJECT: Letter of Agreement

DATE: March 31, 1999

To Whom It May Concern:

The Plymouth Police Department ~~agrees to respond to the request of the~~ Pilgrim Nuclear Power Station operating personnel in the following areas:

1. Control and limit access to the Town roads in the vicinity of the site including the erection of barriers on Rocky Hill Road;
2. Assist in evacuation of the public from the site;
3. Provide locations offsite for emergency equipment.

This agreement will continue upon the Nuclear Regulatory Commission's transfer of the operating license at Pilgrim Station and closure of the sale of Pilgrim Station to Entergy Nuclear Generating Company.

Sincerely,

A handwritten signature in black ink, appearing to read "R. J. Pomeroy".

Robert J. Pomeroy  
Chief of Police

cc: PNPS File



Printed on recycled paper.

# PNPS EMERGENCY PLAN

## Appendix 3: Sample Copies of Letters of Agreements: Plymouth Fire Department



TOWN OF PLYMOUTH  
**FIRE DEPARTMENT**

114 Sandwich Street  
Plymouth, Massachusetts 02360

FAX (508) 4174  
(508) 830-4213

**AGREEMENT BETWEEN PLYMOUTH FIRE DEPARTMENT  
AND ENTERGY NUCLEAR GENERATION COMPANY (ENTERGY NUCLEAR)  
IN THE EVENT OF AN INCIDENT AT  
PILGRIM NUCLEAR POWER STATION.**

The Plymouth Fire Department and Entergy Nuclear herewith agree to the following:

1. Plymouth Fire Department will provide Fire Protection Assistance for the Pilgrim Station site.
  - (a) While providing Fire Protection Assistance the Senior Plymouth Fire Department Officer and the Pilgrim Station Fire Brigade Leader shall remain in continuous communications to co-ordinate fire fighting activities.

In practice, this means that Pilgrim Station will defer to Plymouth Fire Department ~~expertise and authority~~ for Fire Fighting activities and Plymouth Fire Department will defer to Pilgrim Station expertise and authority involving reactor plant safety.

2. Plymouth Fire Department will provide rescue assistance for the site area.
3. Plymouth Fire Department will provide ~~emergency~~ ambulance service.

# PNPS EMERGENCY PLAN

## Appendix 3: Sample Copies of Letters of Agreements: Plymouth Fire Department (Cont.)

### AGREEMENT - Page 2 of 2

#### Plymouth Fire-Entergy Nuclear

4. Plymouth Fire Department will provide storage facilities off site for emergency equipment supplied by Entergy Nuclear.

(a) This is intended to include all equipment currently stored. Any additional equipment storage needs will be subject to negotiation between Plymouth Fire Department and Entergy Nuclear.

5. This agreement will become effective immediately upon the Nuclear Regulatory Commission's transfer of the operating license at Pilgrim Nuclear Power Station and closure of the sale of the Pilgrim Nuclear Power Station to Entergy Nuclear.

APPROVED ENTERGY NUCLEAR  
PILGRIM NUCLEAR POWER STATION

Name Mark Ed. Noy  
Title Vice President  
Date 4/5/99

APPROVED PLYMOUTH FIRE DEPT.

Name Thomas Scuzzi  
Title Fire Chief  
Date 3/29/99

agreeEN.TF/lkwpp

# PNPS EMERGENCY PLAN

## Appendix 4: Glossary of Terms

Any abbreviation followed by a lower case 's' denotes the plural form of the term.

ac.....	alternating current
AEOF.....	Alternate Emergency Operations Facility
ALARA.....	as low as reasonably achievable
ANI.....	American Nuclear Insurers
ANSI.....	American National Standards Institute
ARM.....	Area Radiation Monitor
BECONS.....	PNPS Community Offsite Notification System
BEEPS.....	PNPS Emergency Paging System
BWR.....	boiling water reactor
CANS.....	Computerized Automated Notification System
CB.....	citizen band
CEC.....	Corporate Emergency Center
cc.....	cubic centimeter
CERP.....	Commonwealth of Massachusetts Comprehensive Emergency Response Plan
CFR.....	Code of Federal Regulations
CHRMS.....	Containment High Range Monitoring System
CIC.....	Corporate Information Center
cm <sup>2</sup> .....	square centimeter
CR.....	Control Room
Cs.....	Cesium
DAPAR.....	Dose Assessment and Protective Action Recommendation
dc.....	direct current
DNN.....	Digital Notification Network
DOE.....	U. S. Department of Energy
DOT.....	U. S. Department of Transportation
dpm.....	disintegration per minute
EAL.....	Emergency Action Level
EAS.....	Emergency Alert System
ENS.....	NRC Emergency Notification System
EOC.....	Emergency Operating Center
EOF.....	Emergency Operations Facility
EOP.....	Emergency Operating Procedure
EPA.....	U. S. Environmental Protection Agency
EPZ.....	Emergency Planning Zone
E&S.....	Engineering and Support
EWMDs.....	Emergency Worker Monitoring Decontamination Station
FEMA.....	Federal Emergency Management Agency
FRERP.....	Federal Radiological Emergency Response Plan
FSAR.....	Final Safety Analysis Report
Ge.....	Germanium
GET.....	General Employee Training
HEPA.....	high efficiency particulate air
HPN.....	NRC Health Physics Network
hr.....	hour

# PNPS EMERGENCY PLAN

## Appendix 4: Glossary of Terms (Cont.)

I.....	Iodine
INPO.....	Institute of Nuclear Power Operations
IRAP.....	Interagency Radiological Assistance Program
Li.....	Lithium
LOCA.....	Loss of Coolant Accident
MDPH.....	Massachusetts Department of Public Health
MEMA.....	Massachusetts Emergency Management Agency
mR.....	milliroentgen
NOP.....	Nuclear Organization Procedure
NRC.....	U. S. Nuclear Regulatory Commission
NSRAC.....	Nuclear Safety Review and Audit Committee
ORC.....	Operations Review Committee
OSC.....	Operations Support Center
PAG.....	Protective Action Guide
PANS.....	Prompt Alert and Notification System
PAR.....	Protective Action Recommendation
PASS.....	Post Accident Sampling System
PDP.....	Plant Data Phone
PNPS.....	Pilgrim Nuclear Power Station
R.....	roentgen
RACES.....	Radio Amateur Civil Emergency Services
RERP.....	Radiological Emergency Response Plan
RMT.....	Radiation Monitoring Team
SCBA.....	self-contained breathing apparatus
SGTS.....	Standby Gas Treatment System
SPDS.....	Safety Parameter Display System
Sr.....	Strontium
TAG.....	Technical Assessment Group
TTY.....	Teletypewriter
TLD.....	Thermoluminescent Dosimeter
TSC.....	Technical Support Center
μCi.....	microcuries

# PNPS EMERGENCY PLAN

## Appendix 5: Evacuation Time Estimates

THIS APPENDIX IS CONTAINED IN ANOTHER VOLUME  
AND HAS LIMITED DISTRIBUTION