

**Attachment 1**

Letter Number 2.18.004

Description and Evaluation of the Proposed Changes

---

DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

**SUBJECT:** Revise the Pilgrim Emergency Plan to Address the Permanently Defueled Condition

**1.0 SUMMARY DESCRIPTION**

**2.0 DETAILED DESCRIPTION**

**2.1 Reason for the Proposed Changes**

**2.2 Background**

**2.3 PNPS Specific Background**

**3.0 TECHNICAL EVALUATION**

**3.1 Accident Analysis**

**3.2 Analysis of Proposed Changes**

**3.3 Summary**

**4.0 REGULATORY EVALUATION**

**4.1 Applicable Regulatory Requirements/Criteria**

**4.2 Precedent**

**4.3 No Significant Hazards Consideration**

**4.4 Conclusion**

**5.0 ENVIRONMENTAL CONSIDERATION**

**6.0 REFERENCES**

---



## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

#### 1.0 SUMMARY DESCRIPTION

Pursuant to Title 10, Code of Federal Regulations (CFR) 50.90, Entergy Nuclear Operations, Inc. (ENO) requests U.S. Nuclear Regulatory Commission (NRC) review and approval of a revision to the Pilgrim Nuclear Power Station (PNPS) Site Emergency Plan (SEP).

The proposed changes would revise the current PNPS SEP and the on-shift and augmented Emergency Response Organization (ERO) staffing to support the pending permanent cessation of power operations at PNPS, as certified in Reference 1, and the planned permanent removal of fuel from the PNPS reactor vessel. The proposed reduction from current operating on-shift and augmented ERO staffing levels is commensurate with the need to safely store spent fuel at the facility in a manner that is protective of public health and safety.

ENO has reviewed the proposed changes against the planning standards in 10 CFR 50.47(b) and the requirements in 10 CFR Part 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," and concluded that the standards and requirements will continue to be met. Therefore, no exemption from 10 CFR 50.47 or 10 CFR Part 50, Appendix E is requested.

#### 2.0 DETAILED DESCRIPTION

The proposed changes would revise the PNPS SEP and the on-shift and augmented ERO staffing to reflect the pending permanent cessation of power operations (Reference 1) and the planned permanent removal of fuel from the PNPS reactor vessel. Specifically, the proposed changes would eliminate the on-shift positions not needed for the safe storage of spent fuel in the spent fuel pool (SFP) during the initial decommissioning period and eliminate the augmented staffing positions not necessary to effectively respond to credible accidents in a permanently shut down and defueled condition.

Attachment 2 provides a tabular summary of the proposed changes to Revision 48 of the PNPS SEP. Attachment 3 provides the PNPS SEP with the proposed changes shown in markup format. Attachment 4 provides a clean version of the revised PNPS SEP. Any additional changes beyond those involving a reduction in staffing in Attachments 2, 3, and 4 are included for informational purposes and will be dispositioned prior to implementation in accordance with the requirements in 10 CFR 50.54(q), "Emergency Plans," subparagraph (3), related to emergency preparedness, and specifically to making changes to emergency response plans.

Currently, PNPS SEP Table B-1, "Minimum Staffing Requirements for the PNPS ERO," specifies the on-shift and augmented staffing for certain positions in the following Major Functional Areas:

- Plant Operations
- Assessment of Operational Aspects
- Emergency Direction
- Emergency Control
- Notification and Communication
- Rad Accident Assessment
- Ops Accident Assessment Support
- Plant Systems Engineering
- Repair and Corrective Actions
- Protective Actions (In Plant)
- Site Access Control, Security and Personnel Accountability

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

The proposed post-shutdown on-shift and augmented ERO staff will continue to address the Major Functional Areas.

#### On-Shift Staffing

The proposed changes to the PNPS SEP will eliminate the following on-shift positions:

- One (1) Shift Manager
- One (1) Shift Control Room Engineer (SCRE)
- Three (3) Licensed Nuclear Plant Operators
- Two (2) Non-Licensed Nuclear Plant Operators
- One (1) Radio Chemistry Technician

The proposed post-shutdown Operations on-shift staff will continue to address the Major Functional Areas and will consist of:

- One (1) Control Room Supervisor (CRS) (qualified as a Certified Fuel Handler (CFH))
- Two (2) Non-Certified Operators (NCOs)
- One (1) Radiation Protection Technician

These staffing levels have been considered in the PNPS analysis of proposed post-shutdown on-shift staffing in conjunction with the postulated accidents that will be applicable in the permanently shut down and defueled condition. The analysis is provided in Attachment 5 of this submittal.

Use of the title "Non-Certified Operator" is consistent with NRC approval of changes to the PNPS Renewed Facility Operating License (Reference 2) that revise the minimum shift staffing requirements in the PNPS Renewed Facility Operating License by replacing references to licensed and non-licensed operators with references to CFHs and NCOs. However, implementation of the changes to the PNPS SEP proposed in this submittal is not dependent upon prior NRC approval of the proposed changes to the PNPS Renewed Facility Operating License.

An individual qualified as a CFH will supervise fuel handling operations in the permanently shut down and defueled condition. CRSs will be qualified as CFHs. The CRS position requires additional qualification beyond the CFH training. Command and Control will remain with the CRS, regardless of location of the individual designated as the CRS. NCOs will perform duties typically associated with those performed by current Non-Licensed Nuclear Plant Operators, such as manipulation and monitoring of plant equipment. NCOs will also be assigned to monitor indications and communications in the Control Room. Reference 3 approved the CFH training program. Licensed Nuclear Plant Operators will not be utilized in the permanently shut down and defueled condition.

The NCO position will include the post-shutdown duties of the current Licensed and Non-Licensed Nuclear Plant Operators. The specific training requirements of the NCO position will be developed by the PNPS Training Department and will be reviewed and approved by Operations Management. The training program will be designed with an emphasis on systems and processes important to maintaining SFP cooling, and monitoring and controlling SFP parameters, such as SFP water level and temperature. Consequently, the NCOs will be trained on pertinent Control Room indications and controls that will be monitored and operated to maintain SFP cooling and SFP water level, in addition to plant radiological conditions. The NCO training program will include training on applicable aspects of the PNPS SEP-related NCO duties. NCOs will be trained and qualified

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

consistent with 10 CFR 50.120, "Training and qualification of nuclear power plant personnel," in accordance with ENO training procedures.

Personnel assigned to fill the NCO positions during the post-shutdown period will likely include both previously licensed and non-licensed operators. Much of the required training for the NCO position will already have been completed by the formerly licensed operators, because they have previously been trained and qualified as Reactor Operators to support power operations. The current Non-Licensed Nuclear Plant Operators have been trained and qualified as non-licensed operators only. Therefore, it is expected they would require additional training related to Control Room operations.

Once the specific training requirements for the NCO position have been identified, a gap analysis will be completed for all personnel identified to fill the NCO position. Individualized training plans will be developed and completed to address specific knowledge and skill areas for the selected NCO candidates. This will include training the currently qualified Non-Licensed Nuclear Plant Operators on Control Room indications, controls, and procedures. The initial training for any new NCOs will include all training requirements for the NCO position to ensure the personnel are equipped with the required skills and knowledge to perform their required job functions.

The proposed changes to the on-shift organization are identified in the PNPS SEP Part 2, Table B-1, "Minimum Staffing Requirements for the PNPS ERO" and Part 2, Figure B-1b, "Defueled Operations Emergency Organization," included in Attachments 3 and 4, and summarized in Attachment 2 of this submittal.

#### Augmented Emergency Response Organization Staffing

The proposed changes to the PNPS SEP will eliminate augmented ERO positions currently identified in the PNPS SEP, Table B-1, and Emergency Plan Implementing Procedures (EPIPs) describing the activation and operation of the Technical Support Center (TSC), Emergency Operations Facility (EOF), Operations Support Center (OSC), and Joint Information Center (JIC). Specific augmented ERO positions proposed for elimination are listed in Table 1 of this attachment.

Currently, PNPS SEP Part 2, Table B-1 specifies the on-shift and augmented staffing for certain positions in the Major Functional Areas identified above. The proposed changes to the PNPS SEP will eliminate the following augmented positions identified in Table B-1:

- Technical Support Center (TSC) Reactor Engineer position (identified in Table B-1 as the "Engineer (Reactor)")
- Engineer (Mechanical)
- Engineer (Electrical)
- Five (5) Radiation Protection Technicians
- Augmenting Radio-Chemistry Technician
- OSC Craft (two (2) Electrical Technicians, one (1) Mechanical/Maintenance Technician, and two (2) Nuclear Control (I&C) Technicians)

After permanent cessation of power operations and certification of permanent removal of fuel from the reactor vessel, in accordance with 10 CFR 50.82(a)(1)(i) and (ii), and pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 license will no longer authorize reactor operation or emplacement or retention of fuel in the reactor vessel. Thus, the need for augmenting engineers is reduced. The Engineering Coordinator in the TSC, tasked with performing engineering assessments of plant

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

conditions and actions needed to mitigate damage to the plant, will provide the engineering functions described in Table B-1. With respect to responding to engineering requests from the Engineering Coordinator, this function will continue to be performed by qualified augmenting engineering resources. The Engineering Coordinator will continue to continuously evaluate the need for engineering resources and coordinate with the EOF Technical Advisor to call in qualified engineering personnel. These individuals may be tasked with activities to be completed at engineering offices external to the TSC, called to report to the TSC, or directed to other facilities.

The OSC Craft (Electrical and Mechanical) functions will continue to be performed by augmenting resources. PNPS will maintain trained and qualified I&C personnel to respond to an emergency. These resources are discussed in more detail in Section 3.2.2.2.

The proposed changes to the PNPS SEP will also eliminate the following ERO positions currently identified in Part 2, Section B, of the PNPS SEP:

- TSC Manager
- EOF Manager
- Admin and Logistics Coordinator
- OSC Work Control Coordinator
- TSC Rad/Chem Coordinator

Augmented ERO positions responding to the Control Room are no longer necessary in the permanently shut down and defueled condition. Therefore, the proposed changes to the PNPS SEP will also eliminate Figure B-1b, "Operations Emergency Organization." Proposed changes to the Control Room Augmenting Positions are discussed in Section 3.2.2.5.

#### 2.1. Reason for the Proposed Changes

The proposed changes reflect the pending permanent cessation of power operations, which is anticipated to occur by June 1, 2019 (Reference 1), and the planned permanent defueling of the PNPS reactor. After the reactor is permanently shut down, all fuel assemblies will be removed from the reactor vessel and placed in the SFP. The irradiated fuel will be stored in the SFP and then transferred to the Independent Spent Fuel Storage Installation (ISFSI), where it will remain until it is removed by the U.S. Department of Energy (DOE). Upon docketing of the certifications for permanent cessation of power operations (10 CFR 50.82(a)(1)(i)) and permanent removal of fuel from the reactor vessel (10 CFR 50.82(a)(1)(ii)), pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 license will no longer authorize operation of the reactor or emplacement or retention of fuel into the reactor vessel.

The proposed revisions to the PNPS SEP are commensurate with the reduction in hazards associated with the permanently shut down and defueled condition and will allow PNPS to transition from an appropriate staffing level required for an operating facility to that required for a permanently shut down and defueled facility. The proposed changes are required to properly reflect the conditions of the facility while continuing to maintain the effectiveness of the PNPS SEP and preserve the PNPS Decommissioning Trust Fund.

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

#### 2.2. Background

The on-site emergency plan regulations in 10 CFR 50.47(b)(2) state, in part, that “on-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, [and] timely augmentation of response capabilities is available.”

NUREG-0654, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” (Reference 4), Section II.B, “Onsite Emergency Organization,” presents guidance for meeting the planning standards and requirements of 10 CFR 50.47(b) and 10 CFR Part 50, Appendix E, Section IV.A. The guidance describes the onsite emergency organization, including the staffing requirements found in Table B-1, “Minimum Staffing Requirements for NRC Licensees for Nuclear Power Plant Emergencies.” This table specifies a minimum of ten on-shift responders in four Major Functional Areas. It also specifies seven on-shift response functions where the duties may be performed by shift personnel who are assigned other functions (i.e., there are no dedicated responders to perform these functions). Table B-1 specifies two Major Functional Areas (i.e., firefighting and site access control/personnel accountability) which must be staffed on a site-specific basis.

The on-shift staff must be able to cope with a spectrum of events until augmenting personnel arrive in accordance with the site’s emergency plan commitments. The augmenting responders assume managerial, engineering, and administrative duties from the on-shift personnel, allowing on-shift personnel to focus on their assigned functions.

On November 23, 2011, the NRC published a final rule in the Federal Register amending certain emergency preparedness requirements in its regulations that govern domestic licensing of production and utilization facilities (Reference 5). This final rule amended 10 CFR Part 50, Appendix E, Section IV.A, “Organization,” to address the assignment of tasks or responsibilities to on-shift ERO personnel that could potentially overburden them and prevent the timely performance of their emergency plan functions. Specifically, Section IV.A.9 states that licensees shall perform “...a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan.”

Coincident with the rule change in 10 CFR Part 50, Appendix E, Section IV.A.9, the NRC issued NSIR/DPR-ISG-01, “Interim Staff Guidance – Emergency Planning for Nuclear Power Plants” (ISG-01) (Reference 6). This Interim Staff Guidance (ISG) provides information relevant to performing the on-shift staffing analysis. The ISG states that the NEI-developed NEI 10-05, “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities,” (Reference 7) to establish a standard methodology for a licensee to perform the required staffing analysis, and that the NRC reviewed NEI 10-05 and found it to be an acceptable methodology for this purpose. The ISG also indicates that the completed staffing analyses are required to be part of the emergency plan and the results documented and submitted to the NRC in accordance with 10 CFR 50.54(q)(5).

#### 2.3 PNPS Specific Background

##### On-Shift Staffing

In December 2012, an On-Shift Staffing Analysis was performed in accordance with the guidance in NEI 10-05 to satisfy the requirements of 10 CFR Part 50, Appendix E Section IV.A.9. This analysis examined the capability of the minimum staff listed in Part 2, Table B-1 of the PNPS SEP

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

to perform the key emergency response actions for events described in NSIR/DPR-ISG-01 until augmenting ERO staff arrive. The analysis was conducted by a cross disciplinary team of corporate Emergency Preparedness personnel and station personnel from the Operations, Training, Radiation Protection, Chemistry, Licensing and Emergency Preparedness departments. Additionally, members of the Security staff provided input to the analysis.

The emergency response to each of the events described in NSIR/DPR-ISG-01 was determined by conducting a tabletop of the event using the emergency plan and procedures and the applicable departmental procedures such as emergency and abnormal operating procedures.

Each scenario was reviewed by the cross disciplinary team to determine the required plant actions and emergency plan implementation actions based on plant procedures prior to staff augmentation. These actions were then compared to the minimum on-shift staffing for emergency response implementation as described in Part 2, Table B-1 of the PNPS SEP, ensuring that no actions were assigned to staff members that conflicted with either their dedicated emergency response role or their dedicated operational role, as appropriate. In cases where multiple tasks were assigned to an individual, the team evaluated the timing of the tasks to ensure that they could be performed by the individual in series within any specified time requirements.

The analysis concluded that, while PNPS is operating, an on-shift staff of fourteen (14) was required to respond to the most limiting accident scenario reviewed, which was determined to be a Control Room fire and plant shutdown at the remote shutdown panel.

PNPS SEP Table B-1 specifies the minimum staffing requirements for the PNPS on-shift staff, defines the positions initially responsible for satisfying key ERO functions, and specifies positions that will augment the on-shift staff.

#### Augmented Emergency Response Organization Staffing

The PNPS SEP defines four classes of emergency events: Notification of Unusual Event (UE), Alert, Site Area Emergency (SAE) and General Emergency (GE). Because on-shift personnel can normally address an emergency response to UEs without additional support, staff augmentation may not be activated for an UE declaration. The Operations Shift Manager maintains responsibility during UEs, unless the EOF has been activated. An Alert or higher emergency declaration results in the activation of the EOF, TSC, OSC, and JIC. Overall responsibility for the event is assumed by the Emergency Director in the EOF when the EOF is declared operational. When the ERO is activated, notification is sent to those required to respond to their assigned emergency response facility (ERF).

PNPS SEP Part 2, Section A, "Assignment of Responsibility," describes how the normal plant operating organization transitions into an ERO to effectively deal with any incident at PNPS.

The PNPS Onsite Emergency Organization is described in Part 2, Section B, "Station Emergency Organization," and the Operations Emergency Organization is depicted in Figure B-1b of the PNPS SEP. If initiating conditions exist that result in the declaration of an emergency, the Shift Manager assumes the role of Emergency Director and will be responsible for emergency direction and coordination. The normal operating organization assumes their pre-assigned emergency response roles. This is a short-term response organization that will be augmented within approximately one hour after call-out by additional plant personnel.

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

If an Alert, SAE, or GE is declared, or if the minimum shift crew requires assistance during an UE, the onsite emergency organization will be augmented by additional plant personnel as described in Part 2, Section B of the PNPS SEP, "Station Emergency Organization" and shown in Part 2, Table B-1 and Figures B-1a through B-1h. The PNPS SEP describes the augmented emergency organization that will staff and operate the EOF, TSC, OSC, and JIC as needed within approximately one hour of the request for activation.

Plans and procedures have been put into place to ensure the timely activation of emergency response facilities. PNPS SEP Part 2, Figure A-1 identifies the interfaces among the various emergency organizations.

### 3.0 TECHNICAL EVALUATION

#### 3.1 Accident Analysis

Chapter 14 of the PNPS Final Safety Analysis Report (FSAR) describes safety analyses for postulated Design Basis Accidents (DBAs) under which PNPS is licensed. Upon docketing of the certifications required by 10 CFR 50.82(a)(1)(i) and (ii), the 10 CFR Part 50 license for PNPS will no longer authorize operation of the reactor or emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2). Therefore, most of the accident scenarios postulated in the FSAR will no longer be applicable once PNPS is in the permanently shut down and defueled condition.

The postulated DBA that will remain applicable to PNPS in its permanently shut down and defueled condition is the Fuel Handling Accident (FHA) in the reactor building, where the SFP is located. FSAR Section 14 will be revised to eliminate the DBAs that will not be applicable in the permanently defueled condition.

The Station Blackout (SBO), Appendix R fire, and Anticipated Transient Without Scram (ATWS) accidents were not considered in the analysis of proposed post-shutdown on-shift staffing. Once the certifications required by 10 CFR 50.82(a)(1)(i) and (ii) are docketed, PNPS will no longer be licensed to operate and 10 CFR 50.63 (the SBO Rule) will no longer be applicable pursuant to 10 CFR 50.63(a)(1). Similarly, 10 CFR Part 50, Appendix R is applicable to licensed nuclear power generating stations. Once the certifications required by 10 CFR 50.82(a)(1)(i) and (ii) are docketed, PNPS will no longer be licensed to generate power. Finally, because the 10 CFR Part 50 license will no longer authorize emplacement or retention of fuel in the reactor vessel, an ATWS will no longer be a credible event.

An evaluation was performed to determine if sufficient on-shift staffing would be available to implement emergency response actions in response to potential aircraft impacts in accordance with 10 CFR 50.54(hh)(1). In the permanently shut down and defueled condition, the Fire Brigade will relocate away from target areas and prepare for reentry. The task of maintaining communications during this event are transferred to the NCO trained and qualified to perform this function. Therefore, sufficient staffing is available to promptly implement response actions required under 10 CFR 50.54(hh)(1) without impacting the performance of designated emergency plan functions.

In the permanently shut down and defueled condition, the PNPS Fire Brigade will be responsible for implementing the SFP inventory makeup strategies required under 10 CFR 50.54(hh)(2). PNPS will continue to maintain a trained and qualified Fire Brigade responsible for implementation of the SFP inventory makeup strategies. The Fire Brigade personnel identified in the PNPS Post-

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

Shutdown Emergency Plan (PSEP) are separate and distinct from those responsible for implementing the major elements of the emergency plan including command and control, emergency classification, offsite notifications, and dose assessment/protective action recommendation development. Therefore, sufficient staffing is available to promptly implement SFP inventory makeup strategies required under 10 CFR 50.54(hh)(2) without impacting the performance of designated emergency plan functions.

As described in Section 3.2.2.2, events involving a loss of SFP cooling and/or water inventory can be addressed by implementation of SFP inventory makeup strategies required under 10 CFR 50.54(hh)(2), which will continue to be maintained to satisfy applicable License Conditions of the Renewed Facility Operating License.

### 3.2 Analysis of Proposed Changes

#### 3.2.1 On-Shift Staffing

To support reduced staffing following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, the proposed post-shutdown on-shift staffing was evaluated in conjunction with the postulated accidents that could occur in the permanently shut down and defueled condition (Attachment 5). The analysis of proposed post-shutdown on-shift staffing considered the FHA as the applicable DBA. The analysis of proposed post-shutdown on-shift staffing concluded that in a permanently shut down and defueled condition one (1) on-shift CRS, two (2) NCOs, and one (1) Radiation Protection Technician can perform all required Emergency Plan actions in a timely manner and there are no collateral duties that would prevent the timely performance of emergency plan functions. The Fire Brigade complement considered in the analysis of proposed post-shutdown on-shift staffing was consistent with the requirements from the Fire Hazards Analysis.

#### Accident Scenarios

For the analysis of proposed post-shutdown on-shift staffing, the following accident scenarios were considered:

##### Design Basis Threat

The event evaluated for this analysis assumes a land based threat that is neutralized immediately when inside the protected area fence, no significant damage to equipment or systems that require corrective actions before the ERO is staffed, no radiological release, and no fire that requires firefighting response before the ERO is staffed.

##### Fuel Handling Accident

The postulated design basis accident that will remain applicable to PNPS in its permanently shut down and defueled condition is the FHA in the reactor building where the SFP is located.

##### Aircraft Probable Threat (50.54(hh))

Notification is received from the NRC that a probable aircraft threat exists.



## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

#### Control Room Fire Requiring Evacuation and Maintain SFP Cooling

A fire occurs requiring the evacuation of the Control Room and actions implemented to control service water pumps from a remote location.

#### General Emergency with radioactive release and Protective Action Recommendation (assumed for analysis purposes)

This event is based on the same initial conditions as the FHA, but assumes a dose that exceeds the Environmental Protection Agency's Protective Action Guides beyond the site boundary, and thus necessitates promulgation of a PAR.

The analysis of proposed post-shutdown on-shift staffing indicates that the proposed on-shift personnel can satisfactorily implement all emergency plan functions as required by regulation without augmented ERO personnel for at least 90 minutes following an emergency declaration. The analysis confirmed that no chemistry job tasks were noted as being required within the first 90 minutes of any of the analyzed events. The 90-minute capability exceeds the PNPS SEP requirements that augmented staff respond in approximately 60 minutes. ENO is not requesting an extension to the current approximately 60-minute augmentation capability.

The proposed on-shift staffing changes do not impact the capabilities of the on-shift staff to respond to an emergency and continues to comply with the PNPS SEP, site commitments, and applicable regulations.

Additional analysis for each of the proposed on-shift staffing changes associated with PNPS SEP Part 2, Table B-1 is provided by Major Functional Area in Sections 3.2.1.1 through 3.2.1.8.

3.2.1.1 Major Functional Areas: Plant Operations, Assessment of Operational Aspects, Emergency Direction, and Emergency Control

*Major Tasks: Plant stabilization, Accident Mitigation, Emergency Classification, and PARs.*

#### Current Staffing Requirement

During normal operations, the minimum staff on duty at the plant during all shifts to satisfy this Major Functional Area consists of:

- 1 Shift Manager
- 1 CRS
- 1 SCRE
- 3 Licensed Nuclear Plant Operators
- 4 Non-Licensed Nuclear Plant Operators
- 1 Radiation Protection Technician
- 1 Radio Chemistry Technician
- 2 Fire Brigade (Non-Licensed Nuclear Plant Operators)

#### Proposed Change

The proposed changes to the PNPS SEP will eliminate the following on-shift positions:

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

- 1 Shift Manager
- 1 SCRE
- 3 Licensed Nuclear Plant Operators
- 2 Non-Licensed Nuclear Plant Operator
- 1 Radio Chemistry Technician

Credited on-shift personnel will consist of one CRS and two NCOs. Use of the titles, CRS and NCO, is consistent with NRC approval of proposed changes to the PNPS Technical Specifications (Reference 2). Implementation of the PNP PSEP, as proposed for revision in this submittal, is not dependent upon prior NRC approval of the proposed changes to the PNP Technical Specifications.

#### Analysis

Because of the reduced number of possible events requiring mitigating actions in the permanently shut down and defueled condition and the limited number of actions to be performed by the Control Room positions in a permanently shut down and defueled condition, no Licensed Nuclear Plant Operators or SCRE job tasks were noted as being required for any of the events analyzed in the analysis of proposed post-shutdown on-shift staffing. Therefore, the Licensed Nuclear Plant Operator and the SCRE positions can be eliminated without reducing the effectiveness of the PNPS SEP.

The regulatory standard for minimum staffing requirements for NRC licensees is documented in NUREG-0654. The total minimum on-shift staffing expressed in NUREG-0654, Table B-1, is ten personnel. Plant Operations shift staffing, as implemented previously, was based on an operating philosophy that provided defense in depth. The analysis of proposed post-shutdown on-shift staffing concluded that in a permanently shut down and defueled condition, the on-shift CRS and two NCOs can perform all required PSEP actions in a timely manner and there are no collateral duties that would prevent the timely performance of emergency plan functions. Therefore, this deviation from the guidance presented in NUREG-0654, Table B-1 is acceptable.

#### 3.2.1.2 Major Functional Area: Notification and Communications

*Major Tasks: Notification of PNPS, Local, Commonwealth of Massachusetts, and Federal personnel, and Maintain Communications.*

#### Current Staffing Requirement

The Shift Manager and a Non-Licensed Nuclear Plant Operator perform the function of on-shift notification/communication.

Augmentation of the notification/communication capability is accomplished by the Offsite Communicator within approximately 30 minutes and the EOF Communicator and Emergency Notification System (ENS) Communicator within approximately 60 minutes.

#### Proposed Change

Replace the Shift Manager with the CRS.

Elimination of the augmenting EOF Communicator position. The EOF Communicator does

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

not communicate with the offsite organizations. The position is responsible for analyzing data from the plant and providing updated technical information to the EOF staff based on plant data. These responsibilities have been retained and will be transferred to the EOF Technical Advisor.

Elimination of the augmenting ENS Communicator to the Control Room (functions transferred to the on-shift NCO)

#### Analysis

This function is currently performed by an on-shift staff position performing emergency plan Communicator requirements. The Communicator is currently a Non-Licensed Nuclear Plant Operator. This function is currently augmented by an ENS Communicator responding to the Control Room and an EOF-designated communications position when the facility assumes communications responsibilities.

Initial notification to offsite authorities are required to occur within 15 minutes of declaration of an emergency and initial NRC notification is required to occur immediately after notification of the appropriate Commonwealth of Massachusetts or local agencies and not later than 60 minutes after the time of the emergency declaration. Subsequent notifications are made should the event escalate and for informational updates. The resource commitment to support the communication function is not full time so there is time to support performance of collateral duties during the first 60 minutes until staff augmentation can occur. The on-shift and offsite communicators have advanced communications capabilities available such as the Dedicated Notification Network (DNN). Communications with the NRC take place over dedicated telephone lines provided for and maintained by the NRC ENS. For purposes of the analysis of proposed post-shutdown on-shift staffing, NRC notifications were treated as a continuous action in accordance with 10 CFR 50.72(c)(3), meaning that once the initial NRC communications are established, it was assumed that the NRC will request an open line to be continuously maintained with the NRC Operations Center. The use of dedicated phone circuits and headsets enables these notifications to be performed by the same on-shift NCO who performs the Commonwealth of Massachusetts and local notifications.

Currently, the Shift Manager initially approves the content of the communication with the Commonwealth of Massachusetts and Federal agencies until relieved of this function by the EOF. The PNPS SEP goal is to activate the EOF within approximately 60 minutes. The EOF assumes the communication responsibility concurrent with activation. Therefore, the current communication protocol may remain within the Control Room for the first 60 minutes, regardless of the presence of any prior ERO augmentation.

The elimination of the EOF Communicator position does not impact the capabilities of the on-shift staffing or augmented response. The position can be eliminated without placing an undue burden on the remaining ERO positions in the EOF and without increasing the risk to public health and safety. Attachment 6 contains an analysis of all ERO positions proposed for elimination and evaluates the transfer of tasks currently assigned to the EOF Communicator following permanent cessation of power operations and permanent removal of fuel from the reactor vessel. The EOF will continue to be activated at an Alert or higher declaration. Functional responsibilities of the EOF Communicator position are either currently performed by other positions or will be reassigned to remaining positions. The proposed ERO staffing reductions continue to address the risks to public health and safety,

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

comply with the PNPS SEP, site commitments, and applicable regulations.

In the post-shutdown condition, the task of initially notifying and communicating with offsite authorities will be transferred to the NCO. This change is acceptable because the analysis of proposed post-shutdown on-shift staffing concluded that in a permanently defueled condition, the NCO can perform this required PNPS SEP action in a timely manner and there are no collateral duties that would prevent the timely performance of this emergency plan function.

#### 3.2.1.3 Major Functional Area: Rad Accident Assessment

*Major Tasks: EOF Direction*

##### Current Staffing Requirement

Augmentation with the EOF Manager within approximately 60 minutes

##### Proposed Change

Elimination of the EOF Manager (functions transferred to the Emergency Director).

##### Analysis

The elimination of the EOF Manager position does not impact the capabilities of the on-shift staffing or augmented response. The position can be eliminated without placing an undue burden on the remaining ERO positions in the EOF and without increasing the risk to public health and safety. Attachment 6 contains an analysis of all ERO positions being eliminated and evaluates the transfer of tasks currently assigned to the EOF Manager following permanent cessation of power operations and permanent removal of fuel from the reactor vessel. The EOF will continue to be activated at an Alert or higher declaration. Functional responsibilities of the EOF Manager position are either currently redundantly assigned to other positions or will be reassigned to remaining positions. The proposed ERO staffing reductions continue to address the risks to public health and safety, comply with the PNPS SEP, site commitments, and applicable regulations.

#### 3.2.1.4 Major Functional Area: Ops Accident Assessment Support

##### 3.2.1.4.1 *Major Task: Offsite Dose Assessment*

##### Current Staffing Requirement

On-shift Radiation Protection Technician and Chemistry Technician perform the initial dose assessment.

Augmentation by the Radiological Assessment Coordinator within approximately 30 minutes.

##### Proposed Change

Eliminate the on-shift Chemistry Technician position.

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

#### Analysis

The elimination of the on-shift Chemistry Technician position does not impact the ability of the on-shift staff to perform the initial dose assessment. The analysis of proposed post-shutdown on-shift staffing concluded that in a permanently defueled condition, the on-shift CRS and two NCOs can perform all required PNPS SEP actions in a timely manner and there are no collateral duties that would prevent the timely performance of emergency plan functions. Control Room personnel can perform initial dose assessment using existing EIPs.

#### 3.2.1.4.2 *Major Task: Offsite Surveys*

##### Current Staffing Requirement

Augmentation by two Offsite Monitoring Team (OMT) members within 30 minutes and two additional OMT members within 60 minutes.

##### Proposed Change

No changes in OMT staffing are proposed.

##### Analysis

PNPS proposes no changes to the OMT staffing.

#### 3.2.1.4.3 *Major Task: Onsite and In-Plant Surveys*

##### Current Staffing Requirement

On-shift Radiation Protection Technician initially performs onsite and in-plant surveys.

Augmentation of the on-shift Radiation Protection Technician by two Radiation Protection Technicians within approximately 30 minutes and two additional Radiation Protection Technicians within approximately 60 minutes.

##### Proposed Change

Eliminate the two (2) Radiation Protection Technicians augmenting within approximately 30 minutes.

Reduce the approximately 60-minute augmenting Radiation Protection Technician positions from two (2) to one (1).

##### Analysis

PNPS will no longer be an operating nuclear power plant. In accordance with 10 CFR 50.82(a)(1), pursuant to 10 CFR 50.82(a)(2), the Part 50 license will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel. With irradiated fuel being stored in the SFP and ISFSI, the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The risk in the

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

permanently shut down and defueled condition is significantly reduced because many of the potential initiating conditions that would lead to an emergency declaration will no longer be possible and the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions. If additional resources are determined to be necessary during an emergency, PNPS maintains the necessary staffing to provide sufficient personnel trained in radiation protection to respond and perform the required actions, if necessary, in the permanently shut down and defueled condition.

The elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions. Additionally, the duties and coverages required for the Radiation Protection Technician positions are reduced. The reduced spectrum of possible accidents limits the necessity to take measures requiring multiple damage control or survey teams in the Protected Area. During the initial stages of an accident, not all areas of the plant would be affected by releases of radioactive materials. Therefore, radiation protection coverage would not be required for all areas. Because entry is expected to be limited to those areas where maintenance necessary to maintain SFP cooling is required and the areas potentially affected by an accident involving the SFP are limited, there is a significant decrease in areas potentially requiring radiation protection coverage in a permanently shut down and defueled condition. If radiation protection coverage is deemed necessary, multiple emergency teams can be covered by each Radiation Protection Technician. If radiation protection coverage is not provided (for entry into areas with low radiological risk or known radiological status), worker protection is ensured because emergency workers are required to wear electronic dosimeters (which will alarm at preset dose and dose rate setpoints) and because of the installed Area Radiation Monitors (ARMs) (which alarm locally and remotely at preset dose rates) located throughout the plant.

#### 3.2.1.4.4 *Major Task: Chemistry/Radiochemistry*

##### Current Staffing Requirement

On-shift Radio Chemistry Technician initially performs the task.

Augmentation of the on-shift Radio Chemistry Technician by a Radio Chemistry Technician within approximately 60 minutes.

##### Proposed Change

Eliminate the on-shift Radio Chemistry Technician (functions transferred to the on-shift Radiation Protection Technician).

Eliminate the augmenting Radio Chemistry Technician

##### Analysis

The elimination of the on-shift and augmenting Radio Chemistry Technician positions does not impact the ability of the on-shift or augmented ERO to perform emergency plan functions. The analysis of proposed post-shutdown on-shift staffing concluded that in a permanently shut down and defueled condition, the on-shift CRS and two NCOs can perform all required PNP SEP actions in a timely manner and there are no collateral duties

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

that would prevent the timely performance of emergency plan functions. Control Room personnel can perform initial dose assessment using existing EIPs.

Currently, the Radio Chemistry Technician is an on-shift position per PNPS SEP Part 2, Table B-1 so that a technician is always available to immediately collect and analyze a liquid sample if the applicable radiation monitor is not available during a release, or as directed by the Shift Manager. When the on-shift Radio Chemistry Technician position is eliminated, the on-shift Radiation Protection Technician will be able to perform sampling and analysis, so as to not delay information potentially needed by the Shift Manager to determine if an emergency declaration is required. A gap analysis will be performed to determine any differences between current Radiation Protection Technician training requirements and any new specific knowledge requirements associated with emergency plan sampling and analysis. Such specific knowledge requirements would include how to obtain specific liquid samples. For gaseous releases, the only credible scenario for releasing gas would be to mechanically damage spent fuel during handling or by impact of a heavy object. Activities that could cause mechanical damage will require that a Radio Chemistry Technician be on-site or the radiation monitor listed in gaseous effluent EALs is in service, thereby alleviating any reliance on a potentially delayed sample analysis to determine EAL applicability. A new regulatory commitment is included in Attachment 7.

Once the specific training requirements for the Radiation Protection Technician position have been identified using a systems approach to training, as required by 10 CFR 50.120, a formal gap analysis will be completed for all personnel identified to fill the Radiation Protection Technician position. Individualized training plans will be developed and completed to address specific knowledge and skills areas for each of the selected Radiation Protection Technician candidates. The initial training for all incumbent Radiation Protection Technicians will include all training requirements to perform liquid sampling and analysis to support an emergency declaration.

The initial training requirements for any new Radiation Protection Technician will include all training modules to ensure they are equipped with the required skills and knowledge to perform the required liquid sampling and analysis. These training modules will be specifically identified in the training program description for the Radiation Protection Technician position. This document will be developed in accordance with the requirements of 10 CFR 50.120.

Based on the above, the proposed change in on-shift operations staffing and elimination of the on-shift Chemistry Technician are appropriate given the permanent cessation of power operations and permanent removal of fuel from the reactor vessel.

#### 3.2.1.5 Major Functional Area: Plant System Engineering

*Major Task: TSC/OSC Direction*

##### Current Staffing Requirement

Augmentation by the Emergency Plant Manager within 60 minutes.

##### Proposed Change

No changes in Emergency Plant Manager staffing are proposed.

**ATTACHMENT 1**  
**DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES**

---

Analysis

PNPS proposes no changes to the Emergency Plant Manager staffing.

**3.2.1.6 Major Functional Area: Repair and Corrective Actions**

*Major Tasks: Technical Support, Equipment Repairs, and Corrective Actions*

Current Staffing Requirement

The on-shift SCRE performs the major task of Technical Support.

Augment the on-shift core/thermal hydraulics capability by one within approximately 60 minutes (TSC Reactor Engineer).

Augment the SCRE with the Mechanical Engineer and Electrical Engineer within approximately 60 minutes.

Augment with OSC technicians (Nuclear Maintenance, Electrical Maintenance, Nuclear Control Technician) within approximately 30 and 60 minutes to perform repair and corrective actions.

Proposed Change

Eliminate the on-shift SCRE position.

Eliminate the TSC Reactor Engineer ERO position.

Replace the Mechanical Engineer and Electrical Engineer ERO positions with the Engineering Coordinator ERO position (augmenting within approximately 60 minutes).

Eliminate two (2) Nuclear Maintenance Technicians (Electrical) (augmenting within approximately 30 minutes)

Eliminate two (2) Nuclear Control Technicians (augmenting within 30 minutes)

Eliminate one (1) Nuclear Maintenance Technician (augmenting within approximately 60 minutes)

Analysis

The SCRE performs independent assessments of plant operating concerns, technical support, appropriate corrective actions, analysis of events and their effects, effectiveness of response(s) to emergent conditions, classifications of emergencies, protection of the public, and any other actions related to critical safety functions and plant safety during abnormal and emergency situations. The SCRE also contributes to operations during normal plant conditions. By routine monitoring of equipment and plant operations, the SCRE can focus on preventative actions to mitigate the consequences of an accident.

Because of the permanent cessation of power operations and permanent removal of fuel from the reactor vessel, the SCRE position is no longer necessary for technical and



## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

analytical assistance. The Technical Support function will be assumed by the remaining Control Room personnel.

The analysis of proposed post-shutdown on-shift staffing concluded that the on-shift CRS and two (2) NCOs can perform any required technical analysis, until augmented by the TSC, in a timely manner and there are no collateral duties that would prevent the timely performance of this task.

Currently, the function of the TSC Reactor Engineer is to provide confirmation of adequacy of core cooling, maintenance of coolable core geometry, and to verify that actual plant response to the event is as expected. This function is initially performed by the on-shift SCRE under the guidance of the Shift Manager. The TSC Reactor Engineer position can be eliminated without increasing the risk to public health and safety because the major task of evaluating core/thermal hydraulics is not necessary in a permanently shut down and defueled condition.

The primary duties of the TSC Engineer positions, include: responding to engineering requests from the Engineering Coordinator, evaluating the implementation of Severe Accident Management Guidelines, and assisting the OSC in preparing to send repair teams into the plant. These duties are either no longer necessary in a permanently shut down and defueled condition or will be performed by other members of the post-shutdown ERO.

The Engineering Coordinator is tasked with performing an engineering assessment of plant conditions and/or actions needed to mitigate damage to the plant. With respect to responding to engineering requests from the Engineering Coordinator, this function will continue to be performed by augmenting qualified engineering resources. The Engineering Coordinator will continuously evaluate the need for engineering resources and coordinate with the EOF Technical Advisor to call in additional qualified engineering personnel. These individuals may be tasked with activities to be completed at engineering offices external to the TSC, called to report to the TSC, or directed to other facilities.

Engineering resources will continue to be available as augmented positions with specific training and qualification requirements for assigned personnel in accordance with the site training program. The required training courses and requalification frequencies will be unchanged in the post-shutdown condition. However, these positions will no longer be identified as on-call positions. The elimination of the TSC Engineer positions is justified because the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently shut down and defueled condition is also greatly reduced, which reduces the assessment and mitigation activities the TSC must perform.

Nuclear Maintenance Technician (electrical) duties include providing repairs and corrective actions for plant electrical equipment, as directed. Nuclear Control Technician duties include providing repairs and corrective actions to plant instrumentation, as directed. The OSC Manager will continuously evaluate the need for resources and coordinate with the EOF Technical Advisor to call in additional qualified personnel. OSC resources will continue to be augmented positions with specific training and qualification requirements for assigned personnel in accordance with the site training program. The required training courses and requalification frequencies will be unchanged in the post-shutdown condition. The elimination of the OSC craft positions described above is justified because the

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently shut down and defueled condition is also greatly reduced, which reduces the assessment and mitigation activities the OSC must perform. Additionally, the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions.

#### 3.2.1.7 Major Functional Area: Protective Actions (In Plant)

##### 3.2.1.7.1 Major Tasks: Radiation Protection, Access Control, RP Coverage, Personnel Monitoring, and Dosimetry

###### Current Staffing Requirement

Two on-shift Radiation Protection Technicians perform the in-plant protective actions. These tasks can be performed by personnel assigned other functions.

Augmentation of the on-shift Radiation Protection Technicians by two Radiation Protection Technicians within approximately 30 minutes and two additional Radiation Protection Technicians within approximately 60 minutes.

###### Proposed Change

Reduce the on-shift Radiation Protection Technician positions from two (2) to one (1).

Reduce the approximately 30-minute augmenting Radiation Protection Technician positions from two (2) to one (1).

Reduce the approximately 60-minute augmenting Radiation Protection Technician positions from two (2) to one (1).

###### Analysis

The function of these resources is to provide radiation protection oversight of the on-shift complement of personnel and augmented personnel who are expected to respond to emergency events for damage repair, corrective actions, search and rescue, first aid, firefighting and personnel monitoring. They can also be expected to provide for access control and the issuance of dosimetry.

PNPS will no longer be an operating nuclear power plant. In accordance with 10 CFR 50.82(a)(1), pursuant to 10 CFR 50.82(a)(2), the Part 50 license will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel. With irradiated fuel being stored in the SFP and ISFSI, the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The risk in the permanently shut down and defueled condition is significantly reduced because many of the potential initiating conditions that would lead to an emergency declaration will no longer be possible and the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions. If additional resources are determined to be necessary during an emergency, PNPS maintains the

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

necessary staffing to provide sufficient personnel trained in radiation-protection to respond and perform the required actions, if necessary, in the post-shutdown condition.

During a declared emergency, Radiation Work Permits (RWPs) and dose set points will change depending on the emergency and plant conditions. Both systems have been used by plant workers for several years. Worker dose margins and training qualifications are also automatically verified when the RWP access control system is used. If a worker's dose margin is inadequate or training is expired, the worker's access would be precluded and the access control system would not allow issuance of an electronic dosimeter. In an emergency, approval to exceed dose margins is required. During the log-in process, workers acknowledge their electronic dosimeter alarm set points and that they have read and understand their RWP. The electronic dosimeter provides the worker with a continuous status of dose received and work area dose rates, and will alarm at preset dose and dose rates. Worker use of electronic dosimeters facilitates more efficient use of Radiation Protection Technicians to provide Radiation Protection coverage while preserving the As Low As Reasonably Achievable (ALARA) concept. Access control is maintained because the worker must obtain an electronic dosimeter and enter a radiation work permit number into the access control computer system prior to being allowed access into the Radiologically Controlled Area (RCA). No setup is required for the RWP access control computers, which allows Radiation Protection Technicians to be used for more critical tasks during emergency response. Personnel are required to self-monitor for radioactive contamination whenever they exit the RCA. No Radiation Protection involvement is necessary for this contamination monitoring activity because workers are trained to perform this task without supervision or oversight. However, contaminated personnel exiting the RCA will require Radiation Protection oversight.

The analysis of proposed post-shutdown staffing concluded that in a permanently shut down and defueled condition, NCOs can perform this required action in a timely manner and there are no collateral duties that would prevent the timely performance of this task.

Radiation Protection coverage will only be performed if the radiological status of a room is unknown and there is a definitive need for emergency workers to enter the room to perform a task. The decision to provide Radiation Protection coverage may be based on plant radiological conditions as indicated by installed ARMs.

During the initial stages of an accident, not all areas of the plant would be affected by releases of radioactive materials. Therefore, Radiation Protection coverage would not be required for all areas. Because entry is expected to be limited to those areas where maintenance necessary to maintain SFP cooling is required and the areas potentially affected by an accident involving the SFP are limited, there is a significant decrease in areas potentially requiring Radiation Protection coverage in a permanently shut down and defueled condition. If Radiation Protection coverage is deemed necessary, multiple emergency teams can be covered by the on-shift Radiation Protection Technician. If Radiation Protection coverage is not provided (for entry into areas with low radiological risk or known radiological status), worker protection is ensured because emergency workers are required to wear electronic dosimeters (which will alarm at preset dose and dose rate set points) and because of the installed ARMs (which alarm locally and remotely at preset dose rates) located throughout the plant.

Tasks requiring the issuance of dosimetry are not expected in the initial stages of an event, but during the recovery phase. Prior to self-issuance of dosimetry, workers are assigned a

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

RWP, set points are adjusted, and briefings are conducted by Radiation Protection.

The analysis of proposed post-shutdown on-shift staffing determined there are no time critical Radiation Protection or chemistry tasks, and that task performance is directed and prioritized by the CRS for the 90-minute time frame used in the analysis. There are no overlapping Radiation Protection or chemistry tasks. Radiation Protection tasks could be performed without augmented personnel in the 90-minute time frame used in the analysis.

Activities related to the conduct of surveys or radiological assessment of the area surrounding PNPS are performed by the OMT Members identified in the Offsite Surveys Major Task of Table B-1 of the PNPS SEP, independent of the augmenting Radiation Protection Technician positions.

PNPS proposes reducing the number of augmenting Radiation Protection Technicians listed in the Major Functional Area of protective Actions (In Plant) in Table B-1 of the PNPS SEP from four (4) to two (2). As previously described, the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The risk in the permanently shut down and defueled condition is significantly reduced because many of the potential initiating conditions that would lead to an emergency declaration will no longer be possible and the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions.

#### 3.2.1.7.2 *Major Task: Fire Fighting*

##### Current Staffing Requirement

The PNPS Fire Brigade complement currently consists of five (5) responders, one of which acts as the Plant Fire Brigade Leader.

##### Proposed Change

No changes in Fire Brigade staffing are proposed. The Fire Brigade complement will continue to consist of a minimum of five (5) responders, including a Fire Brigade Leader, and a minimum of four (4) trained and qualified Fire Brigade Members in compliance with the PNPS fire protection program.

##### Analysis

The Fire Brigade will continue to be staffed in accordance with Technical Specifications. All Fire Brigade training and qualification requirements will be maintained using the Fire Hazards Analysis requirements. The Fire Brigade will continue to perform the task of firefighting in the permanently shut down and defueled condition. The Fire Brigade will be available to promptly implement SFP inventory makeup strategies required under 10 CFR 50.54(hh)(2) without impacting the performance of designated emergency plan functions.

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

#### 3.2.1.7.3 *Major Task: Rescue Ops and First Aid*

##### Current Staffing Requirement

On-shift Emergency Medical Personnel (EMP) initially perform the task.

Augmentation by on-call ambulance service.

##### Proposed Change

No changes in EMP staffing are proposed.

##### Analysis

PNPS proposes no staffing changes to the Rescue Operations and First Aid Major Functional Area.

#### 3.2.1.8 Major Functional Area: Site Access Control and Personnel Accountability

##### *Major Tasks: Security*

##### Current Staffing Requirement

Staffing in accordance with Technical Specifications and PNPS procedures.

##### Proposed Change

No changes in Security staffing are proposed.

##### Analysis

PNPS proposes no staffing changes to the Site Access Control and Personnel Major Functional Area.

#### 3.2.2 Augmented ERO Staffing

Prior to an emergency declaration, the normal plant operating organization is in place. The initial classification of an off-normal event and declaration are performed by the Shift Manager. Upon the classification and declaration of an emergency, the Shift Manager assumes the role of Emergency Director and retains that role until another designated Emergency Director can assume control. Following implementation of the changes described in this amendment, the command and control function will reside with the CRS. The onsite emergency organization is activated by personnel notification or when the station alarm is sounded and the emergency is announced over the public-address system. Initially, the ERO consists of the normal operating shift personnel who function as the emergency team members. The normal operating staff is augmented by qualified plant personnel. Those personnel onsite respond when the station alarm is sounded and the announcement is made or when individuals are notified by another means. Personnel not onsite during off-hours operations will be notified via an ERO notification system. A designated on-shift plant employee shall perform notifications.

In the permanently shut down and defueled condition, PNPS will continue to maintain ERO teams to respond to an emergency declaration. When the CRS directs the activation of the ERO call out

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

system, ERO members are notified to ensure adequate coverage of ERO positions at each ERF. ERO members not on-call are expected to respond unless they are unavailable.

PNPS requires ERO personnel to act promptly in reporting to their assigned ERF even when not on duty. During duty periods, procedures further require that team members respond within the required response time for their ERF (unless a longer time frame is specified for their specific ERO position) and that they remain fit for duty throughout the duty assignment. Individuals are trained to respond to their ERF even if they are not on duty. Excess personnel that respond may be assigned support responsibilities or be designated as a relief shift. This conservative policy ensures timely activation because some off-duty personnel may respond sooner than the on-duty personnel.

The proposed revisions to the PNPS SEP will not change the requirements described above. Management's continued expectation is that all duty and support ERO members report to their respective ERF as quickly as possible. All ERO personnel are expected to respond when notified by the ERO notification system. Each current ERO position is identified, and the associated duties are captured, in the ERO Task Analysis provided in Attachment 6. Each of the positions proposed for elimination was analyzed to identify the key duties associated with the position and the duties were then evaluated against the planning standards in NUREG-0654.

During the development of the proposed changes to the ERO staffing, documented in Attachment 6, PNPS initiated a multi-disciplined team review of each aspect of the ERO staffing changes. This team included participants from Operations, Training, Engineering, Radiation Protection, Emergency Planning, Regulatory Assurance, and Plant Management. Each proposed change in task alignment was discussed and vetted by this group.

The Table provided in Attachment 6 contains columns with headings "Implementing Actions" and "Task Assigned To?" These columns provide the details regarding the disposition of each task. Some of the duties are identified as being eliminated because they become unnecessary following permanent cessation of power operations and permanent removal of fuel from the reactor vessel. Other duties are identified as eliminated because the duties are performed redundantly by other positions in the ERO and will continue to be performed by these positions in the post-shutdown ERO.

Procedures and training materials depicting the changes presented in Attachment 6 will be developed to align with the revised task assignments. These procedures will be used to support training of post-shutdown ERO staff and the conduct of drills that will be used to validate the staffing and assignment of tasks.

The PNPS ERO includes technical support staff that have dedicated responsibilities for interfacing with the Commonwealth of Massachusetts and local representatives. Currently, during an emergency, these personnel are dispatched to the Commonwealth of Massachusetts and local Emergency Operations Centers (EOCs) to act as communication liaisons between the EOCs and plant technical staff and to provide clarification of emergency response information. These positions are described in Section C of the PNPS SEP, included in Attachments 3 and 4.

With irradiated fuel being stored in the SFP and ISFSI, the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The potential for risks in the permanently shut down and defueled condition is significantly reduced because many of the potential initiating conditions that could lead to an emergency declaration will no longer be possible.

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

and the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions. As a result, the complexity of communications with the town EOCs will also be reduced. Therefore, PNPS proposes to eliminate Offsite Liaisons responding to the towns of Carver, Kingston, Duxbury, and Marshfield EOCs. Offsite Liaisons responding to the town of Plymouth and the Commonwealth of Massachusetts EOCs will be retained. The Commonwealth EOC serves as the command and control center for offsite emergency response. The Plymouth 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 Region II EOCs. Rather than dispatch liaisons to the Carver, Kingston, Duxbury, and Marshfield EOCs, PNPS will establish a bridge line between the EOF and the town EOCs to maintain an open line of communications with offsite response organization (ORO) representatives in each EOC. In addition, these EOCs will continue to maintain communication with the Massachusetts EOC and will continue to receive direction from Commonwealth representatives in the Massachusetts EOC. The Lead Offsite Liaison in the EOF will be retained in the post-shutdown period and will be responsible for maintaining communications with Carver, Kingston, Duxbury, and Marshfield representatives via the bridge line.

The proposed changes to the PNPS SEP, including the proposed elimination of the Offsite Liaison positions discussed above, and the changes made to develop the post-shutdown ERO, have been discussed with the representatives from each ORO, evaluated for impacts on the ERO, and for the ability of OROs to implement their Federal Emergency Management Agency (FEMA)-approved Radiological Emergency Preparedness (REP) Plans. Potential impacts on the ability of Commonwealth of Massachusetts and local response organizations to effectively implement their FEMA-approved REPs do not exist because no tasks that require interfacing with Commonwealth and local response organizations are proposed for elimination. PNPS will appropriately address elimination of the Offsite Liaisons described above by establishing a bridge line between the EOF and the town EOCs and by transferring the necessary tasks currently performed by the Offsite Liaison positions proposed for elimination to remaining post-shutdown ERO positions. Prior to implementation of the proposed ERO changes, PNPS will provide the Commonwealth of Massachusetts and the towns of Plymouth, Carver, Kingston, Duxbury, and Marshfield with a proposed mark-up of the offsite plans and procedures addressing the proposed elimination of augmented ERO positions. This action is included as a regulatory commitment in Attachment 7.

To validate the results of the proposed changes to the augmented ERO, one or more drills will be developed and conducted prior to implementation of the changes described within this LAR. The drills will be conducted to confirm the ability of the post-shutdown augmented ERO to perform the necessary functions of each ERF and will utilize the post-shutdown procedures that will be developed depicting the revised assignment of duties. The drills will be used to train and qualify post-shutdown augmented ERO members, evaluate and validate the ability to accomplish the stated mission of each ERF, and ensure that the planning standard functions are preserved with no degradation in time-sensitive activities or in the ability to communicate with OROs. The drills will also validate that the post-shutdown augmented ERO continues to address the risks to public health and safety and comply with the PNPS SEP, site commitments, and applicable regulations. Implementing procedures will be revised to address the permanently shut down and defueled conditions. The revised procedures will be used to support training of the post-shutdown augmented ERO staff and during the conduct of drills described above.

Training and draft procedures will be developed and in place prior to performing post-shutdown ERO validation drills. The drill scenarios will include SFP events and will be designed to test the major elements of the post-shutdown PNPS PSEP. Major elements to be tested will include

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

communications and coordination with OROs, including the JIC. State, local, and Federal response organizations will be provided the opportunity to participate in or observe the drills. New regulatory commitments for scenario elements and communication with offsite agencies are included in Attachment 7.

PNPS has not yet finalized a schedule of drills that will be conducted. When the dates are finalized, the NRC Project Manager will be notified and provided with a schedule. PNPS will provide the schedule to the NRC with appropriate advanced notice, thereby allowing the NRC and FEMA an opportunity to observe each drill. A new regulatory commitment to provide the schedule to the NRC Project Manager is included in Attachment 7.

**Table 1 – Proposed Post-Shutdown ERO Staffing**

Current PNPS Augmented ERO Positions	Proposed Post-Shutdown Augmented ERO Positions <sup>1</sup>	Justification for Elimination <sup>2</sup>
<b>Technical Support Center</b>		
Emergency Plant Manager	Emergency Plant Manager	Not Applicable (N/A) – Position Retained
TSC Manager	--	Tasks Transferred
Operations Coordinator	Operations Coordinator	N/A – Position Retained
TSC Reactor Engineer	--	No remaining functions
Engineering Coordinator	Engineering Coordinator	N/A – Position Retained
TSC Engineers (Electrical, I&C, Mechanical)	--	Tasks Transferred
IT Specialist	--	Tasks Transferred
TSC Communicator	--	Tasks Transferred
Radiological Coordinator	Radiological Coordinator	N/A – Position Retained
Security Coordinator	Security Coordinator	N/A – Position Retained
Operations Engineer	--	Tasks Transferred
<b>Operations Support Center</b>		
OSC Manager	OSC Manager	N/A – Position Retained
OSC Operations Support	--	Tasks Transferred
Work Control Coordinator	--	Tasks Transferred
Mechanical and I&C/Electrical Coordinators	--	Tasks Transferred
Rad/Chem Coordinator	--	Tasks Transferred
Technicians (Electrical, I&C, Mechanical Maintenance, RP/HP)	Technicians (Electrical, Mechanical Maintenance, RP/HP)	N/A – Positions Retained, tasks transferred, or tasks are no longer necessary
Dosimetry Clerk	--	Tasks Transferred
OSC Log Keeper	--	Tasks Transferred



# ATTACHMENT 1

## DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

Current PNPS Augmented ERO Positions	Proposed Post-Shutdown Augmented ERO Positions <sup>1</sup>	Justification for Elimination <sup>2</sup>
<b>Emergency Operations Facility</b>		
Emergency Director	Emergency Director	N/A – Position Retained
EOF Manager	--	Tasks transferred
EOF Technical Advisor	EOF Technical Advisor	N/A – Position Retained
EOF Log Keeper	--	Tasks transferred
Radiological Assessment Coordinator	Radiological Assessment Coordinator	N/A – Position Retained
Offsite Communicator	Offsite Communicator	N/A – Position Retained
Lead Offsite Liaison	Lead Offsite Liaison	N/A – Position Retained
Offsite Team Coordinator	Offsite Team Coordinator	N/A – Position Retained
Administration and Logistics Coordinator	--	Tasks transferred
IT Specialist	--	Tasks transferred
Dose Assessor	Dose Assessor	N/A – Position Retained
Offsite Liaisons (1 Commonwealth/5 towns)	Offsite Liaisons (1 Commonwealth/1 Town of Plymouth)	Positions retained, tasks transferred, bridge line to be established, or tasks are no longer necessary
EOF Communicator	--	Tasks transferred
Public Information Liaison	--	Tasks transferred
Monitoring Teams (2)	Monitoring Teams (2)	N/A – Positions Retained
<b>Joint Information Center</b>		
Company Spokesperson	Company Spokesperson	N/A – Position Retained
JIC Manager	JIC Manager	N/A – Position Retained
Technical Advisor	--	Tasks transferred
JIC Logistics Coordinator	--	Tasks transferred
Information Coordinator	--	Tasks transferred
JIC Media Liaison	JIC Media Liaison	N/A – Position Retained
JIC Log Keeper	--	Tasks transferred
JIC Technical Assistant	--	Tasks transferred
Press/Release Writer	--	Tasks transferred
Media Monitors (2)	Media Monitor	N/A – Position Retained
Inquiry Response Coordinator	--	Tasks transferred
Agency Coordinator	--	Tasks transferred
Credentialing	--	Tasks transferred
Media Assistants	--	Tasks transferred
A/V Assistants	--	Tasks transferred
Public Inquiry Responders	Public Inquiry Responder	N/A – Position Retained
Admin Team	--	Tasks transferred

<sup>1</sup> A dash (--) indicates the position is proposed for elimination upon implementation of the Post-Shutdown Emergency Plan.

<sup>2</sup> Detailed information regarding the proposed elimination of each position is provide in Section 3.2.2.1 through 3.2.2.4 and in Attachment 6.

The intent of Table 1 is to compare the current augmented ERO positions against the proposed post-shutdown ERO positions. As an example, the TSC Reactor Engineer is a position that is proposed for elimination in the post-shutdown ERO, because in a permanently shut down and defueled condition the responsibilities associated with a reactor core no longer need to be maintained. The proposed elimination of augmented ERO positions are described in greater detail

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

in the following sections. The proposed elimination of ERO positions identified in procedures as typical minimum staffing positions to declare the ERFs operational are described in greater detail. Other augmented ERO positions proposed for elimination, but not identified in procedure as typical minimum staffing positions to declare the ERFs operational, are also addressed in the following sections.

Additional analysis for each of the augmented ERO staffing changes that impact the content of PNPS SEP Table B-1 was previously addressed by Major Functional Area in Sections 3.2.1.1 through 3.2.1.8.

Attachment 6 contains an analysis of all augmented ERO positions proposed for elimination and evaluates the transfer of tasks to remaining augmented ERO positions following permanent cessation of power operations and permanent removal of fuel from the reactor vessel.

#### 3.2.2.1 Technical Support Center

The TSC has been designed to meet the intent of the guidance in NUREG-0696, "Functional Criteria for Emergency Response Facilities," and the clarification in NUREG-0737, Supplement 1, "Clarification of TMI Action Plan Requirements," as applicable. Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, the TSC will continue to be located on the ground floor of the Operations and Maintenance Building. The proposed changes to the PNPS SEP do not involve any physical modifications to, or layout/configuration changes in, the TSC.

The current PNPS SEP and ERO staffing is intended to address the risks to public health and safety inherent in an operating reactor. The risk in the permanently shut down and defueled condition is significantly reduced because many of the potential initiating conditions that would lead to an emergency declaration will no longer be possible.

The spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently shut down and defueled condition is also greatly reduced, which reduces the assessment and mitigation activities the TSC must perform. Therefore, the TSC Manager, TSC Reactor Engineer, TSC Engineers, IT Specialist, TSC Communicator, and Operations Engineer positions can be eliminated without placing an undue burden on the remaining ERO positions in the TSC and without increasing the risk to public health and safety. Attachment 6 contains an analysis of all ERO positions being eliminated and evaluates the transfer of tasks to remaining ERO positions following permanent cessation of operations. The proposed ERO staffing reductions continue to address the risks to public health and safety, comply with the PNPS SEP, site commitments, and applicable regulations.

The proposed staffing changes eliminate one ERO position in the TSC described in procedure as typical minimum staffing that could be necessary to declare the TSC operational: the TSC Manager.

#### TSC Manager

The TSC Manager is currently responsible for supervising engineering activities associated with mitigation of the emergency, for ensuring the TSC is being activated in accordance with applicable procedures, and for ensuring notification of the ERO has been made. This position also advises the Emergency Plant Manager on proposed corrective actions and emergency classification from a technical standpoint (i.e., plant system damage, core damage, etc.).

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

Functional responsibilities of the TSC Manager position that remain applicable in a permanently shut down and defueled condition will be reassigned to remaining positions in the TSC. The proposed ERO staffing reductions continue to address the risks to public health and safety, comply with the PNPS SEP, site commitments, and applicable regulations.

The following TSC positions are also proposed for elimination following permanent cessation of power operations and permanent removal of fuel from the reactor vessel:

- TSC Reactor Engineer
- TSC Engineers (Electrical, I&C, and Mechanical) and Operations Engineer
- IT Specialist
- TSC Communicator

#### TSC Reactor Engineer

The primary duties of the TSC Reactor Engineer include: monitoring plant conditions for any indication of core damage, assisting in clarifying core parameter information to the Engineering Team, and assisting in the implementation of Severe Accident Management Guidelines. In a permanently shut down and defueled condition, responsibilities associated with a reactor core no longer need to be maintained. The TSC Reactor Engineer can provide information to dose assessment personnel regarding SFP accidents. However, this task can also be performed by the EOF Technical Advisor and Operations personnel, including the Operations Coordinator in the TSC. Elimination of the TSC Reactor Engineer position will have no effect on emergency response in a permanently shut down and defueled condition because the position is not required to assess the condition of fuel in the SFP during an emergency. The TSC Reactor Engineer position can be eliminated without increasing the risk to public health and safety because the major task of evaluating core/thermal hydraulics is not necessary or possible in a permanently shut down and defueled condition.

#### TSC Engineers (Electrical, I&C, and Mechanical) and Operations Engineer

The primary duties of the TSC Engineer positions include responding to engineering requests from the Engineering Coordinator, evaluating the implementation of Severe Accident Management Guidelines, and assisting the OSC in preparing to send repair teams into the plant. The Operations Engineer is responsible for providing engineering support to Operations. These duties are either no longer necessary in a permanently shut down and defueled condition or will be performed by the Engineering Coordinator. The Engineering Coordinator is tasked with performing an engineering assessment of plant conditions and/or actions needed to mitigate damage to the plant.

With respect to responding to engineering requests from the Engineering Coordinator, this function will continue to be performed by augmenting qualified engineering resources. The Engineering Coordinator will continuously evaluate the need for engineering resources and coordinate with the EOF Technical Advisor to call in qualified engineering personnel. These individuals may be tasked with activities to be completed at engineering offices external to the TSC, called to report to the TSC, or directed to other facilities.

Engineering resources will continue to be available as augmenting positions with specific training and qualification requirements for assigned personnel in accordance with the site training program. The required training courses and requalification frequencies will be unchanged in the permanently shut down and defueled condition. However, these positions will no longer be identified as on-call positions. The elimination of the TSC Engineer positions is justified because the spectrum of

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently shut down and defueled condition is also greatly reduced, which reduces the assessment and mitigation activities the TSC must perform.

Attachment 6 contains an analysis of the TSC Engineer and Operations Engineer positions and evaluates the transfer of tasks to remaining ERO positions following permanent cessation of power operations and permanent removal of fuel from the reactor vessel.

#### IT Specialist and TSC Communicator

The elimination of the IT Specialist and TSC Communicator positions does not impact the capabilities of the on-shift staffing or augmented response. The TSC will continue to be activated at an Alert or higher declaration. Functional responsibilities of the positions eliminated as a result of the changes will be reassigned to remaining positions. The proposed ERO staffing reductions continue to address the risks to public health and safety, comply with the PNPS SEP, site commitments, and applicable regulations.

#### 3.2.2.2 Operations Support Center

The OSC has been designed to meet the intent of the guidance in NUREG-0696, "Functional Criteria for Emergency Response Facilities," and the clarification in NUREG-0737, Supplement 1, "Clarification of TMI Action Plan Requirements," as applicable. Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, the OSC will continue to be located on the ground floor of the Operations and Maintenance Building next to the TSC. The proposed changes to the PNPS SEP do not involve any physical modifications to, or layout/configuration changes in, the OSC.

The OSC Manager is responsible for ensuring adequate staffing of the OSC to support the emergency; working with the Emergency Plant Manager to set priorities for the OSC; and directing the activities of the OSC to support the emergency response. If at any time the OSC Manager determines additional manpower is necessary to accomplish the mission of the OSC, the OSC Manager will contact the EOF Technical Advisor to arrange for augmentation by additional personnel to support the emergency response functions of the OSC.

In the permanently shut down and defueled condition, the primary functions of the OSC will remain dispatching of, and accounting for, Repair and Corrective Action Teams and dispatching of Onsite and Offsite Monitoring Teams. The OSC Craft functions will continue to be performed by qualified augmenting resources. The OSC Manager will continue to continuously evaluate the need for resources and coordinate with the EOF Technical Advisor to call in additional assistance. OSC resources will continue to be augmented positions with specific training and qualification requirements for assigned personnel in accordance with the site training program. The required training courses and requalification frequencies will be unchanged in the post-shutdown condition.

The proposed staffing changes eliminate two ERO positions in the OSC described in procedure as typical minimum staffing that could be necessary to declare the OSC operational: two (2) I&C Technicians and one (1) Chemistry Technician.

#### I&C (Nuclear Control) Technicians

I&C Technician duties include providing repairs and corrective actions to plant instrumentation, as directed. The spectrum of credible accidents and operational events, and the quantity and

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. Therefore, the duties and coverage required for this position is reduced.

#### Chemistry Technician

As previously described, with the proposed elimination of the shift Chemistry Technician position, Radiation Protection Technicians will be able to perform sampling and analysis, so as not to delay information potentially needed to determine if an emergency declaration is required.

The following OSC positions are proposed for elimination following permanent cessation of power operations and permanent removal of fuel from the reactor vessel:

- OSC Operations Support
- Work Control Coordinator
- Mechanical and I&C/Electrical Coordinators
- Rad/Chem Coordinator
- Dosimetry Clerk
- OSC Log Keeper

Additionally, the proposed staffing changes eliminate two (2) augmenting electrical technicians. These positions are included in PNPS Table B-1 as augmenting responders and are addressed in Section 3.2.1.6. Electrical Technician duties include providing repairs and corrective actions for plant electrical equipment, as directed. The spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The duties and coverage required for these positions are reduced.

The proposed augmented ERO staffing continues to address the risks to public health and safety, comply with the PNPS Emergency Plan, site commitments, and applicable regulations.

In the permanently shut down and defueled condition, the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The primary events of concern in the immediate post-shutdown and defueled condition will be a FHA and a loss of SFP cooling and/or water inventory. Events involving a loss of SFP cooling and/or water inventory can be addressed by implementation of SFP inventory makeup strategies required under 10 CFR 50.54(hh)(2). These capabilities will continue to be maintained as a license condition. OSC staff is not relied upon to implement SFP inventory makeup.

Restoration of equipment supporting SFP cooling and inventory will be the primary focus of emergency mitigation actions for the TSC and OSC in a permanently shut down and defueled condition. Although ERO activation/response time requirements will be unchanged, the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions. The proposed changes do not impact the capability to assess and monitor actual or potential offsite consequences of a radiological emergency or provide information to offsite authorities in a timely manner. Therefore, the OSC Operations Support, Work Control Coordinator, Mechanical and I&C/Electrical Coordinators, Rad/Chem Coordinator, Dosimetry Clerk, and OSC Log Keeper positions can be eliminated without placing an undue burden on the remaining ERO positions in the OSC and without increasing the risk to public health and safety.

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

#### 3.2.2.3 Emergency Operations Facility

The EOF functions to maintain overall management of PNPS's emergency response and recovery resources; evaluate, coordinate, and communicate emergency response activities with Federal, Commonwealth of Massachusetts, and local emergency response organizations; evaluate offsite accident conditions; and make recommendations to offsite agencies regarding protective actions. Massachusetts representatives are provided space and communications at the EOF and staff this facility at an Alert or higher classification.

The EOF has been designed to meet the intent of the guidance in NUREG-0696, "Functional Criteria for Emergency Response Facilities," and the clarification in NUREG-0737, Supplement 1, "Clarification of TMI Action Plan Requirements," as applicable. The proposed changes to the PNPS SEP do not involve any physical modifications to, or layout/configuration changes in, the EOF.

The EOF maintains extensive communications capability with all ERFs and direct links are established between the EOF, the Commonwealth of Massachusetts and town EOCs, and the JIC to provide up-to-date emergency status reports. The proposed changes to the PNPS SEP do not involve changes to the ability of offsite authorities to report to the EOF or the JIC, and as a result, do not impact the ability of the offsite authorities to mobilize to, or operate from, the EOF and JIC.

When activated, the Emergency Director reports to the EOF and directs the activities of the ERO throughout the emergency and until the recovery activities have been terminated. The Emergency Director, or a designated alternate, issues periodic status reports of the event to the responding offsite representatives located in the EOF. The Lead Offsite Liaison will continue to provide and interpret plant information to the offsite representatives in the EOF and will communicate this information to the towns of Carver, Kingston, Duxbury, and Marshfield EOCs through a bridge line. Additionally, technical support staff will be dispatched to the Commonwealth of Massachusetts and Plymouth EOCs when requested and appropriate, or generally, during a SAE or GE to act as a liaison with the plant technical staff so the magnitude of the emergency can be more clearly conveyed to the EOCs' staff. The proposed changes to the PNPS SEP do not reduce the ability of PNPS to provide the necessary information regarding the status and progression of an event or in the frequency at which event information updates are provided. Nor do the changes impact the ability to dispatch additional technical support to the EOCs. As a result, the proposed changes do not impact the ability of PNPS to communicate with the offsite response organizations.

Centralized coordination of the offsite radiological assessment effort with all organizations interested in, and/or performing, assessments is necessary to ensure that the data and its interpretation are reviewed by organizations with monitoring and assessment responsibilities. The number and types of organizations performing this effort vary with time. Initially, plant emergency response personnel are the only organization performing this function and they are directed from, and their results evaluated, at the EOF. Commonwealth of Massachusetts authorities join the EOF monitoring and assessment activities. Federal response agencies would augment plant and Commonwealth radiological assessment efforts upon their arrival. Plant and Commonwealth monitoring efforts are coordinated at the EOF. The proposed changes to the PNPS SEP do not involve changes to offsite radiological assessment capabilities or coordination of these efforts with OROs, and as a result, do not impact the ability of offsite agencies to effectively implement their emergency plans.

PNPS will continue to maintain the capability to display plant and meteorological data in the EOF, maintain offsite monitoring equipment at the EOF and maintain the current dose assessment

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

capabilities at the EOF. Additionally, PNPS will maintain a goal of approximately sixty (60) minutes after declaration of an emergency to activate the EOF.

The proposed staffing changes eliminate one (1) ERO position in the EOF described in PNPS EPIPs as a minimum staff position to declare the EOF operational: the EOF Manager.

#### EOF Manager

The EOF Manager is currently responsible for the overall operation of the EOF. The EOF Manager is responsible for determining responder's fitness for duty (FFD); interfacing with Entergy Corporate; and ensuring timely communications with local, Commonwealth of Massachusetts, and federal agencies after activation of the EOF. Currently, the Administration and Logistics Coordinator is tasked with ensuring FFD of responders and the Emergency Director is responsible for ensuring timely communications with other organizations, including Entergy Corporate. The EOF Manager, the Administration and Logistics Coordinator, and the Emergency Director currently have 60-minute response times to the EOF. The functions and responsibilities of the EOF Manager and the Administration and Logistics Coordinator will be transferred to the EOF Technical Advisor. The EOF Technical Advisor and the Emergency Director will continue to have a 60-minute response time following the approval of the proposed PNPS SEP changes. Therefore, there will be no impact on the timely performance of these tasks.

The following EOF positions are also proposed for elimination following permanent cessation of operations and permanent removal of fuel from the reactor vessel:

- EOF Log Keeper
- Administration and Logistics Coordinator
- IT Specialist
- EOF Communicator
- Public Information Liaison

The proposed elimination of the EOF staffing listed above do not impact the capabilities of the on-shift staffing or augmented response. The positions can be eliminated without placing an undue burden on the remaining ERO positions in the EOF and without increasing the risk to public health and safety. The EOF will continue to be activated at an Alert or higher declaration. Functional responsibilities of the positions proposed for elimination will be reassigned to remaining positions. The proposed augmented ERO staffing reductions continue to address the risks to public health and safety, comply with the PNPS SEP, site commitments, and applicable regulations. The proposed changes to the ERO staffing in the EOF do not impact the ability of the Commonwealth of Massachusetts or the local response organizations to effectively implement their FEMA-approved REP Plans. Additional discussion of the potential impact on OROs is included in Section 3.2.2.6.

#### 3.2.2.4 Joint Information Center

The PNPS JIC provides a location for the news media to receive information from all involved agencies and companies during an emergency and provide it to the public. The JIC is equipped to accommodate the news media for large briefings and conferences and contains extensive communications systems. Media monitoring and rumor control are also accomplished at the JIC, allowing PNPS, Entergy, and Commonwealth of Massachusetts representatives to address incorrect information or rumors. Responses to media telephone inquiries are also addressed at the JIC.

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

The JIC meets the intent of the guidance in Planning Standard G of NUREG-0654. The proposed changes to the PNPS SEP do not involve any physical modifications to, or layout/configuration changes in, the JIC.

The proposed staffing changes eliminate the following ERO positions in the JIC described in the current PNPS SEP in Part 2, Figure B-1h, "Emergency Public Information Organization."

- JIC Technical Advisor
- JIC Logistics Coordinator
- Information Coordinator
- Inquiry Response Coordinator
- JIC Log Keeper
- JIC Technical Assistant
- Press Release Writer
- Agency Coordinator
- Media Assistants
- A/V Assistants
- Admin Team

The Information Coordinator and Inquiry Response Coordinator are also addressed in Part 2, Section G.4.c with respect to their role in rumor control.

In the permanently shut down and defueled condition, media briefings and rumor control will continue to be conducted regularly during an emergency to provide accurate and timely information to the public. The proposed JIC staffing changes described above do not impact the capabilities of the on-shift staffing or augmented response. The positions can be eliminated without placing an undue burden on the remaining ERO positions in the JIC and without increasing the risk to public health and safety. Functional responsibilities of the positions proposed for elimination will be reassigned to remaining positions. The proposed ERO staffing reductions continue to address the risks to public health and safety, comply with the PNPS SEP, site commitments, and applicable regulations.

#### 3.2.2.5 Control Room Augmenting Positions

PNPS SEP Figure B-1b, "Operations Emergency Organization" illustrates the Operations Emergency Organization, including augmenting positions that respond to the Control Room following an emergency declaration. PNPS SEP Part 2, Section B.1.b.5 describes the Emergency Plant Operations Supervisor as the senior management position in the Control Room responsible for coordination of the Control Room activities with all outside emergency facilities. The Emergency Plant Operations Supervisor does not relieve the Shift Manager 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 TSC Manager, OSC Manager, Radiological Coordinator, and the TSC Security Coordinator.

After permanent cessation of power operations and certification of permanent removal of fuel from the reactor vessel, in accordance with 10 CFR 50.82(a)(1)(i) and (ii), and pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 license will no longer authorize reactor operation or emplacement or retention of fuel in the reactor vessel. The spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently shut down and defueled condition is also greatly reduced. Therefore, augmented



## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

ERO positions responding to the Control Room are no longer necessary in the permanently shut down and defueled condition.

The proposed on-shift staffing levels have been considered in the PNPS analysis of proposed post-shutdown on-shift staffing in conjunction with the postulated accidents that will be applicable in the permanently shut down and defueled condition. The analysis concluded that in a permanently shut down and defueled condition one (1) on-shift CRS, two (2) NCOs, and one (1) Radiation Protection Technician can perform all required Emergency Plan actions in a timely manner and there are no collateral duties that would prevent the timely performance of emergency plan functions. The analysis is provided in Attachment 5 of this submittal. Attachment 6 contains an analysis of all ERO positions proposed for elimination and evaluates the transfer of tasks to remaining ERO positions following permanent cessation of power operations and permanent removal of fuel from the reactor vessel.

#### 3.2.2.6 Impact on Off-Site Response Organizations

Because of the location of PNPS, the planning and responsibilities at the Commonwealth of Massachusetts and local level involve state coordination with the towns of Plymouth, Carver, Kingston, Duxbury, and Marshfield. This coordination currently includes the dispatch of Pilgrim Offsite Liaisons to each town's EOC, as well as the Massachusetts EOC. The PNPS SEP also describes the extensive communications network maintained between PNPS, the Commonwealth of Massachusetts, and local agencies as a means of promptly notifying and maintaining communications with appropriate authorities. As illustrated in Part 2, Figure F-4 of the PNPS SEP, the coordination effort with offsite authorities is initiated by notifying the Commonwealth of Massachusetts and Emergency Planning Zone/Host towns and providing them with information using a pre-arranged notification form that provides key information regarding an emergency.

With irradiated fuel being stored in the SFP and ISFSI, the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The risk in the permanently shut down and defueled condition is significantly reduced because many of the potential initiating conditions that would lead to an emergency declaration will no longer be possible and the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions. As a result, the complexity of communications with the town EOCs will also be reduced. The Commonwealth EOC serves as the command and control center for offsite emergency response. The Plymouth 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 Region II EOCs. Therefore, PNPS proposes to eliminate Offsite Liaisons responding to the towns of Carver, Kingston, Duxbury, and Marshfield EOCs. Offsite Liaisons responding to the town of Plymouth and the Commonwealth of Massachusetts EOCs will be retained. Rather than dispatch liaisons to the Carver, Kingston, Duxbury, and Marshfield EOCs, PNPS will establish a bridge line between the EOF and each town's EOC to maintain an open line of communications with town representatives in each EOC. In addition, these EOCs will maintain communication with the Massachusetts EOC and will continue receive direction from Commonwealth representatives in the Massachusetts EOC. The Lead Offsite Liaison in the EOF will be retained in the post-shutdown period and will provide and interpret plant information to the ORO representatives in the EOF as well as to the Carver, Kingston, Duxbury, and Marshfield EOCs through the bridge line. Additionally, technical support staff will be dispatched to the Commonwealth of Massachusetts EOC when requested and appropriate, or generally, during a SAE or GE to act as a liaison with the plant technical staff so the magnitude of the emergency can be more clearly conveyed to the EOCs' staff.

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

Formal offsite REP plans, approved by the FEMA in accordance with 44 CFR 350, are required to be maintained in effect until the NRC approves an exemption to formal offsite emergency preparedness requirements. Because the changes proposed by ENO, specifically in regards to ERO staffing of the EOF and JIC, and the Offsite Liaisons at the Carver, Kingston, Duxbury, and Marshfield EOCs, have the potential to adversely impact the effective implementation of the Commonwealth of Massachusetts and local REP plans, the proposed changes to the PNPS SEP were evaluated for impacts on the ability of the Commonwealth of Massachusetts and local response organizations to effectively implement their FEMA-approved REP Plans. This evaluation included a review of the Commonwealth of Massachusetts Radiological Emergency Response Plan, Commonwealth of Massachusetts Radiological Emergency Response Plan Area II, the Town of Plymouth Radiological Emergency Response Plan, the Town of Carver Radiological Emergency Response Plan, the Town of Duxbury Radiological Emergency Response Plan, the Town of Kingston Radiological Emergency Response Plan, the Town of Marshfield Radiological Emergency Response Plan, the Town of Bridgewater Radiological Emergency Response Plan, the City of Taunton Radiological Emergency Response Plan, and the Town of Braintree Reception Community Radiological Emergency Response Plan. The review of the Commonwealth of Massachusetts and local REPs identified specific references to PNPS Offsite Liaison positions proposed for elimination. The town emergency plans refer to these Offsite Liaisons as "Pilgrim Station Community Liaisons." Additionally, the proposed changes to the PNPS SEP involve the elimination of two (2) PNPS ERO positions that have tasks that involve interfacing with Commonwealth and local representatives. These two positions are the EOF Manager and the JIC Logistics Coordinator. The discussion provided previously in this section addresses the potential impacts the proposed changes to the PNPS SEP have on the EOF and the JIC and the potential impacts on the ability of the offsite response organizations to implement their FEMA-approved REP Plans. The proposed changes do not reduce the ability of PNPS to provide the necessary information regarding the status and progression of an event or the frequency at which event information updates are provided. Nor do the changes impact the ability to provide technical information or dispatch technical support to the EOCs, if necessary. The proposed changes to the ERO staffing do not impact the ability of the Commonwealth of Massachusetts or the local response organizations to effectively implement their FEMA-approved REP Plans.

During the last week of September 2017, PNPS Emergency Planning management and staff discussed the proposed changes to the PNPS SEP, including the proposed elimination of Offsite Liaison positions in the Carver, Kingston, Duxbury, and Marshfield EOCs, with the Emergency Management Directors from each of these towns. Each of the individuals agreed that the dedicated bridge line would be a satisfactory replacement for the liaison at their town EOC. In addition, the proposed changes to the ERO staffing and the PNPS SEP were also discussed with the representatives from the Commonwealth of Massachusetts and the towns of Plymouth, Duxbury, and Marshfield, and the FEMA regional office during a meeting on November 9, 2017.

### 3.3 Summary

ENO performed an analysis to evaluate the ability of the proposed post-shutdown on-shift staffing to implement all regulatory required emergency plan functions in conjunction with the postulated accidents that will be applicable in the permanently shut down and defueled condition. Additionally, an evaluation of all augmented ERO positions was performed to analyze the transfer of tasks from those positions proposed for elimination to remaining augmented ERO positions following permanent cessation of power operations and permanent removal of fuel from the reactor.

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

The proposed ERO staffing changes do not impact the capabilities of the on-shift staffing or augmented response. The ERFs will continue to be activated within approximately 60 minutes of an Alert or higher declaration. The remaining post-shutdown functional responsibilities of the positions proposed for elimination are being reassigned to remaining positions. The proposed augmented ERO staffing reductions continue to address the risks to public health and safety and comply with the PNPS SEP, site commitments, and applicable regulations. }

#### 4.0 REGULATORY EVALUATION

##### 4.1 Applicable Regulatory Requirements/Criteria

###### On-Shift and Augmented ERO Staffing

The specific standards for establishing an onsite emergency organization to respond to emergency events appears in 10 CFR 50.47(b) and 10 CFR Part 50, Appendix E, Section IV.A. Specifically:

- 10 CFR 50.47(b)(1): Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.
- 10 CFR 50.47(b)(2): On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and the interfaces among various onsite response activities and offsite support and response activities are specified.
- 10 CFR Part 50, Appendix E Section IV.A.1: [E-Plans must contain] A description of the normal plant operating organization.
- 10 CFR Part 50, Appendix E Section IV.A.2: [E-Plans must contain] A description of the onsite emergency response organization with a detailed discussion of:
  - Authorities, responsibilities, and duties of the individual(s) who will take charge during an emergency;
  - Plant staff emergency assignments;
  - Authorities, responsibilities, and duties on an onsite emergency coordinator who shall be in charge of the exchange of information with offsite authorities responsible for coordinating and implementing offsite emergency measures;

NUREG-0654 (Reference 4), Section II.B, "Onsite Emergency Organization," presents guidance for meeting these requirements. The guidance describes the onsite emergency organization, including the staffing requirements found in Table B-1, "Minimum Staffing Requirements for NRC Licensees for Nuclear Power Plant Emergencies."

10 CFR Part 50, Appendix E, Section IV.A.9 states that licensees shall perform "...a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan."

NSIR/DPR-ISG-01, "Interim Staff Guidance – Emergency Planning for Nuclear Power Plants" (Reference 6) provides information relevant to performing the on-shift staffing analysis. The ISG states that NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," is an acceptable methodology for performing the staffing analysis. The ISG also

indicates that the completed staffing analyses are required to be part of the emergency plan and the results documented and submitted to the NRC in accordance with 10 CFR 50.54(q)(5).

NRC Regulatory Guide 1.101, (Reference 8), Section C, stated in part "The criteria and recommendations in Revision 1 of NUREG-0654/FEMA-REP-1, 'Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (November 1980),' are methods acceptable to the NRC staff for complying with the standards in 10 CFR 50.47 that must be met in onsite and offsite emergency response plans. These criteria provide a basis for NRC licensees and State and local governments to develop acceptable radiological emergency plans and improve emergency preparedness."

Regulatory Guide 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors," November 2011 (Reference 9), describes a method that the NRC considers to be acceptable to implement the requirements in 10 CFR 50.54(q). In Section 2.a.(1), the NRC encourages licensees to arrange a conference call with the NRC staff to clarify 10 CFR 50.54(q) requirements and guidance within this regulatory guide for EP changes that increase the activation time of emergency response facilities.

Regulatory Issue Summary 2005-02, "Clarifying the Process for Making Emergency Plan Changes," Revision 1 (Reference 10) was issued by the NRC to clarify the meaning of "decrease in effectiveness" and the process for making changes to emergency plans, and to provide some examples of changes that are considered to be a decrease in effectiveness.

#### **4.2 Precedent**

The requested changes to the on-shift staffing and augmented ERO staffing are similar in nature to the post-shutdown changes approved by the NRC and implemented by Entergy's Vermont Yankee Nuclear Power Station (Reference 11) and the Omaha Public Power District's Ft. Calhoun Station (Reference 12).

#### **4.3 No Significant Hazards Consideration**

Pursuant to 10 CFR 50.92, ENO has reviewed the proposed changes and concludes that the changes do not involve a significant hazards consideration because the proposed changes satisfy the criteria in 10 CFR 50.92(c). These criteria require that operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The proposed changes would revise the PNPS SEP to reduce the number of on-shift and augmented ERO positions commensurate with the hazards associated with a permanently shut down and defueled facility.

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

The discussion below addresses each of these criteria and demonstrates that the proposed amendment does not constitute a significant hazard.

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed changes to the PNPS SEP do not impact the function of plant structures, systems, or components. The proposed changes do not affect accident initiators or precursors, nor does it alter design assumptions. The proposed changes do not prevent the ability of the on-shift and augmented ERO to perform their intended functions to mitigate the consequences of any accident or event that will be credible in the permanently shut down and defueled condition. The proposed changes only remove positions that will no longer be credited in the PNPS SEP.

Therefore, the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed changes reduce the number of on-shift and augmented ERO positions commensurate with the hazards associated with a permanently shut down and defueled facility. The proposed changes do not involve installation of new equipment or modification of existing equipment, so that no new equipment failure modes are introduced. Also, the proposed changes do not result in a change to the way that the equipment or facility is operated so that no new accident initiators are created.

Therefore, the proposed amendment does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

Margin of safety is associated with confidence in the ability of the fission product barriers (i.e., fuel cladding, reactor coolant system pressure boundary, and containment structure) to limit the level of radiation dose to the public. The proposed changes are associated with the PNPS SEP and do not impact operation of the plant or its response to transients or accidents. The changes do not affect the Technical Specifications. The proposed changes do not involve a change in the method of plant operation, and no accident analyses will be affected by the proposed changes. Safety analysis acceptance criteria are not affected by the proposed changes. The revised PNPS SEP will continue to provide the necessary response staff with the proposed changes.

Therefore, the proposed amendment does not involve a significant reduction in a margin of safety.

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

#### 4.4 Conclusion

Based on the above, ENO concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

#### 5.0 ENVIRONMENTAL CONSIDERATION

This amendment request meets the eligibility criteria for categorical exclusion from environmental review set forth in 10 CFR 51.22(c)(9) as follows:

- (i) The amendment involves no significant hazards consideration.

As described in Section 4.3 of this evaluation, the proposed changes do not involve a significant hazards consideration.

- (ii) There is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite.

The proposed changes do not involve any physical alterations to the plant configuration or any changes to the operation of the facility that could lead to a change in the type or amount of effluent release offsite.

- (iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed changes do not involve any physical alterations to the plant configuration or any changes to the operation of the facility that could lead to a significant increase in individual or cumulative occupational radiation exposure.

Based on the above, ENO concludes that the proposed change meets the eligibility criteria for categorical exclusion as set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

#### 6.0 REFERENCES

1. Letter, Entergy Nuclear Operations, Inc. to NRC, "Notification of Permanent Cessation of Power Operations," (2.15.080), dated November 10, 2015 (ML15328A053)
2. Letter, NRC to Entergy Nuclear Operations, Inc., "Issuance of Amendment Regarding Administrative Controls for Permanently Defueled Condition (CAC No. MF9304)," dated July 10, 2017 (ML17066A130)
3. Letter, NRC to Entergy Nuclear Operations, Inc., "Approval of Certified Fuel Handler Training and Retraining Program (CAC No. MF9275)," dated April 12, 2017 (ML17058A325)
4. 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, published November 1980.

## ATTACHMENT 1

### DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

---

5. Federal Register Volume 76, Number 226, Wednesday, November 23, 2011, Rules and Regulations, "Enhancements to Emergency Preparedness Regulations; Final Rule."
6. NSIR/DPR-ISG-01, "Interim Staff Guidance – Emergency Planning for Nuclear Power Plants," Revision 0, November 2011 (ML113010523)
7. NEI 10-05, Rev. 0, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities."
8. NRC Regulatory Guide 1.101, "Emergency Response Planning and Preparedness for Nuclear Power Reactors," Revision 4, July 2003
9. Regulatory Guide 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors," November 2011
10. Regulatory Issue Summary 2005-02, "Clarifying the Process for Making Emergency Plan Changes," Revision 1, April 19, 2011
11. Letter, NRC to Entergy Nuclear Operations, Inc., "Vermont Yankee Nuclear Power Station – Issuance of Amendment to Renewed Facility Operating License Re: Changes to the Emergency Plan (TAC No. MF3668)," dated February 4, 2015 (ML14346A065)
12. Letter, USNRC to Omaha Public Power District, "Fort Calhoun Station – Unit 1 – Issuance of Amendment Re: Revise Emergency Plan to Address the Permanently Defueled Condition (CAC No. MF8326)," dated July 27, 2017 (ADAMS Accession Number ML17123A348)

**Attachment 2**

Letter Number 2.18.004

Tabular Summary of Proposed Changes to the PNPS Site Emergency Plan, Revision 48



## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
List of Effective Pages	--	Updated revision	Editorial change to reflect document changes
Table of Contents	--	Updated page numbers as necessary	Editorial revision to reflect changes described below
Part 1, Section B, 1 <sup>st</sup> paragraph	The plant is a General Electric Boiling Water Reactor (BWR) design and produces a net electrical output of 689 megawatts.	Deleted	PNPS will no longer be an operating nuclear power plant. Description of the plant and site has been revised to indicate the permanently shut down and defueled condition.
Part 1, Section B, 2 <sup>nd</sup> paragraph	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).	The probability of such a release is considered very low due to plant design and strict guidelines enforced by the Nuclear Regulatory Commission (NRC).	PNPS will no longer be an operating nuclear power plant. Operational guidelines no longer apply.
Part 1, Section B, 3 <sup>rd</sup> paragraph	In accordance with 10 CFR 72.32(c), the emergency plan for a nuclear power reactor satisfies the requirements for an emergency plan for an ISFSI which is located within the exclusion area of the nuclear power reactor, and therefore a separate ISFSI emergency plan is not required.	In accordance with 10 CFR 72.32(c), the emergency plan required by 10 CFR 50.47 satisfies the requirements for an emergency plan for an ISFSI which is located within the exclusion area of the nuclear power reactor, and therefore a separate ISFSI emergency plan is not required.	PNPS will no longer be an operating nuclear power plant. Therefore, reference to 10 CFR 50.47 is more appropriate.
Part 2, Section B.1, 2 <sup>nd</sup> paragraph	The normal PNPS personnel complement is established with the Senior Nuclear Executive having overall authority for Station operations (the Shift Manager always retains the responsibility for actual operation of plant systems).	The normal PNPS personnel complement is established with the Senior Nuclear Executive having overall authority for Station operations (the Control Room Supervisor (CRS) always retains the responsibility for actual operation of plant systems).	Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one (1) Control Room Supervisor (CRS) and two (2) Non-Certified Operators (NCOs).
Part 2, Section B.1, 2 <sup>nd</sup> paragraph	EN-EP-801, Emergency Response	Emergency Plan Implementing	PNPS will no longer be an operating

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
	Organization, outlines position responsibilities for the PNPS Emergency Response Organization.	Procedures outline position responsibilities for the PNPS Emergency Response Organization.	nuclear power plant. Fleet ERO procedure EN-EP-801 will no longer apply. PNPS will have site-specific procedures for the ERO.
Part 2, Section B.1, 2 <sup>nd</sup> paragraph, last sentence.	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 EN-EP-801.	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.	PNPS will no longer be an operating nuclear power plant. Fleet ERO procedure EN-EP-801 will no longer apply. PNPS will have a site-specific procedure for the ERO.
Part 2, Section B.1.a	N/A	Bullets regarding Offsite Communicator, Offsite and MEMA Technical Liaisons, and Lead Offsite Liaison moved from Part 2, Section B.1.c.	See below discussions regarding Part 2, Section B.1.c bulleted items.
Part 2, Section B.1.b, 1 <sup>st</sup> bullet	The <i>Emergency Plant Operations Supervisor</i> is a member of Plant Operations who holds an operator's license on PNPS.	Deleted	The position of Emergency Plant Operations Supervisor will not exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining positions on-shift positions.
Part 2, Section B.1.b, 2 <sup>nd</sup> bullet	The <i>Technical Support Center Manager</i> is assigned from Plant Management Staff.	Deleted	The position of TSC Manager will not exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining positions within the TSC.
Part 2, Section B.1.c	The EOF Manager is a member of the PNPS senior management staff or designated alternate from PNPS	Deleted	The position of EOF Manager will not exist in the Permanently Defueled ERO. Duties and responsibilities will

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
	staff.		be transferred to remaining positions within the EOF.
Part 2, Section B.1.c, bulleted items	<p>The Offsite Communicator is normally selected from Plant Management Staff (any management level supervisor who has communication skills and can coordinate emergency communication efforts may be used to fill this position).</p> <p>The Admin and Logistics Coordinator is normally a member of Plant Management Staff.</p> <p>The Offsite and MEMA Technical Liaisons are members of Plant Management Staff and/or support organizations.</p> <p>The Lead Offsite Liaison is a Senior Engineer or a designated alternate from Plant Management Staff.</p>	Move to Part 2, Section B.1.a after Radiological Assessment Coordinator and delete bullet referring to the Admin and Logistics Coordinator.	The position of EOF Manager will not exist in the Permanently Defueled ERO. These positions will report to the Emergency Director in the EOF.
Part 2, Section B.2	The Shift Manager, or in his absence from the Control Room, the available on-shift Senior Reactor Operator (SRO) assumes the position of Emergency Director until the Senior Nuclear Executive or a designated alternate arrives at the Emergency Operations Facility and assumes the position.	The CRS assumes the position of Emergency Director until the Senior Nuclear Executive or a designated alternate arrives at the Emergency Operations Facility and assumes the position.	Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one CRS and two NCOs. Command and control responsibilities will remain with the CRS (qualified as a CFH) regardless of location, until relieved by the Emergency Director.
Part 2, Section B.3	<u>Succession to Emergency Director:</u> Initially, the Shift Manager or the	<u>Succession to Emergency Director:</u> Initially, the CRS assumes the duties	Following permanent cessation of power operations and permanent

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
	available on-shift Senior Reactor Operator (SRO) assumes the duties and responsibilities as the Emergency Director. When augmentation of the on-shift complement occurs, the Senior Nuclear Executive or designated alternate reports to the EOF and, once briefed, relieves the Shift Manager 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.	and responsibilities as the Emergency Director. When augmentation of the on-shift complement occurs, the Senior Nuclear Executive or designated alternate reports to the EOF and, once briefed, relieves the CRS 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 CRS to the EOF.	removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one CRS and 2 NCOs. Command and control responsibilities will remain with the CRS (qualified as a CFH) regardless of location, until relieved by the Emergency Director.  The Emergency Plant Operations Supervisor position will not exist.
Part 2, Section B.4, last sentence	The Emergency Plant Manager, the EOF Manager, and the Company Spokesperson report directly to the Emergency Director, as do the Radiological Assessment Coordinator, the EOF Technical Advisor and the ICP Security Coordinator.	The Emergency Plant Manager and the Company Spokesperson report directly to the Emergency Director, as do the Radiological Assessment Coordinator, the EOF Technical Advisor and the ICP Security Coordinator.	The position of EOF Manager will not exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining positions within the EOF.
Part 2, Section B.5, 1 <sup>st</sup> bullet of 1 <sup>st</sup> paragraph	Activities associated with PNPS operations (the Shift Manager retains authority for actual	Activities associated with PNPS operations (the CRS retains authority for actual operation of plant	Following permanent cessation of power operations and permanent removal of fuel from the reactor

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
	operation of plant systems).	systems).	vessel, Operations on-shift personnel will consist of one CRS and 2 NCOs.
Part 2, Section B.5, 3 <sup>rd</sup> and 4 <sup>th</sup> paragraph	<p>The <u>Emergency Plant Operations Supervisor</u> 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 Shift Manager of responsibilities for operation of the plant. This position advises the Emergency Plant Manager on plant status and trends and their potential impact.</p> <p>The Emergency Plant Operations Supervisor interfaces with the Technical Support Center Manager, Operations Support Center Manager, Radiological Coordinator and the TSC Security Coordinator.</p>	Deleted	The position of Emergency Plant Operations Supervisor will not exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining on-shift positions.
Part 2, Section B.5, 5 <sup>th</sup> & 6 <sup>th</sup> paragraphs	The Technical Support Center Manager 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 Manager is responsible for the	Deleted	The positions of TSC Manager and Emergency Plant Operations Supervisor will not exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining positions on-shift and within the TSC, respectively.

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
	<p>activation and proper staffing of the TSC. This includes augmentation of engineering staff, as needed.</p> <p>The Technical Support Center Manager interfaces with the Emergency Plant Operations Supervisor, Operations Support Center Manager, Radiological Coordinator and the TSC Security Coordinator.</p>		
Part 2, Section B.5, 7 <sup>th</sup> paragraph	This position works with the Operations Support Center Work Control Coordinator to provide for maintenance of accountability for operations personnel dispatched into the plant during the emergency and Emergency Plant Manager in the TSC to provide for appropriate prioritization and dispatch.	This position provides for maintenance of accountability for operations personnel dispatched into the plant during the emergency and works with the Emergency Plant Manager in the TSC to provide for appropriate prioritization and dispatch.	The position of Operations Support Center Work Control Coordinator will not exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to the OSC Manager.
Part 2, Section B.5, 8 <sup>th</sup> paragraph	The Operations Support Center Manager interfaces with the Technical Support Center Manager, Emergency Plant Manager, Emergency Plant Operations Supervisor, Rad/Chem Coordinator, TSC Security Coordinator and the Admin and Logistics Coordinator.	The Operations Support Center Manager interfaces with the Emergency Plant Manager, TSC Security Coordinator and the EOF Technical Advisor.	The positions of TSC Manager, Emergency Plant Operations Supervisor, and Rad/Chem Coordinator will not exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining positions on-shift and in the ERO.
Part 2, Section B.5, 9 <sup>th</sup> paragraph, last sentence	Initially, unless directed to do otherwise by the Shift Manager, the on-shift Radiation Protection Supervisor/Technician performs the duties of Radiological Coordinator until relieved.	Initially, unless directed to do otherwise by the CRS, the on-shift Radiation Protection Supervisor/Technician performs the duties of Radiological Coordinator until relieved.	Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one CRS and two NCOs. Command and control

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
			responsibilities will remain with the CRS (qualified as a CFH) regardless of location, until relieved by the Emergency Director.
Part 2, Section B.5, 10 <sup>th</sup> paragraph	The Radiological Coordinator interfaces with the Technical Support Center Manager, the Operations Support Center Manager and the Rad/Chem Coordinator.	The Radiological Coordinator interfaces with the Emergency Plant Manager and the Operations Support Center Manager.	The positions of TSC Manager and Rad/Chem Coordinator will not exist in the Permanently Defueled ERO. The Radiological Coordinator will interface with the Emergency Plant Manager directly. Duties and responsibilities will be transferred to remaining positions in the ERO.
Part 2, Section B.5, 11 <sup>th</sup> paragraph, 4 <sup>th</sup> sentence	In addition, the TSC Security Coordinator coordinates the security activities of all Pilgrim Station emergency response facilities, and coordinates with the Admin and Logistics Coordinator regarding security in the JIC.	In addition, the TSC Security Coordinator coordinates the security activities of all Pilgrim Station emergency response facilities, and coordinates with the EOF Technical Advisor regarding security in the JIC.	The position of Admin and Logistics Coordinator will not exist in the Permanently Defueled ERO. The EOF Technical Advisor will coordinate with the TSC Security Coordinator regarding security at the JIC.
Part 2, Section B.5, 12 <sup>th</sup> paragraph	The TSC Security Coordinator interfaces with the Emergency Plant Operations Supervisor, the Operations Support Center Manager, the Technical Support Center Manager, the Admin and Logistics Coordinator, the Emergency Director and the ICP Security Coordinator in response to events involving security threats to the site or site personnel.	The TSC Security Coordinator interfaces with the Operations Support Center Manager, the Emergency Plant Manager, the EOF Technical Advisor, the Emergency Director and the ICP Security Coordinator in response to events involving security threats to the site or site personnel.	The positions of Emergency Plant Operations Supervisor, Technical Support Center Manager will not exist in the Permanently Defueled ERO. The TSC Security Coordinator will interface with the Emergency Plant Manager directly.
Part 2, Section B.5, 13 <sup>th</sup> paragraph	The EOF Manager is responsible for the overall operation of the Emergency Operations Facility (EOF) including:	Deleted	The position of EOF Manager will not exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
	<ul style="list-style-type: none"> <li>• Determination of emergency responders' ability to perform their assigned duties under Fitness for Duty criteria at the EOF following emergency response activation.</li> <li>• Interface with Entergy Corporate 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.</li> <li>• Assurance of timely communications with local, Commonwealth, and federal agencies after activation of the EOF following emergency response activation.</li> <li>• Coordination of additional support and resources from corporate through the Admin and Logistics Coordinator and from offsite through the Emergency Director.</li> </ul>		positions within the EOF.
Part 2, Section B.5, 17 <sup>th</sup> paragraph	The <u>Admin and Logistics Coordinator</u> is responsible for initial and relief staffing during an extended emergency and logistical support (food, transportation, equipment maintenance, etc.) and for securing the Emergency Operations Facility.	The <u>EOF Technical Advisor</u> is responsible for initial and relief staffing during an extended emergency and logistical support (food, transportation, equipment maintenance, etc.) and for securing the Emergency Operations Facility.	The positions of EOF Manager and Admin and Logistics Coordinator will not exist in the Permanently Defueled ERO.



## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
	The Admin and Logistics Coordinator coordinates with the EOF Manager as necessary to obtain resources from Entergy Corporate.	The EOF Technical Advisor coordinates with Entergy Corporate as necessary to obtain additional resources.	
Part 2, Section-B.5, 18 <sup>th</sup> paragraph	The Admin and Logistics Coordinator interfaces with the Technical Support Center Manager, the Operations Support Center Manager, the EOF Manager, and the TSC Security Coordinator.	The EOF Technical Advisor interfaces with the Emergency Plant Manager, the Operations Support Center Manager, the Emergency Director, and the TSC Security Coordinator.	The positions of TSC Manager, EOF Manager, and Admin and Logistics Coordinator will not exist in the Permanently Defueled ERO. The EOF Technical Advisor will interface with the Emergency Plant Manager and Emergency Director directly.
Part 2, Section-B.5, 19 <sup>th</sup> paragraph	The <u>Lead Offsite Liaison</u> is responsible for assisting the Commonwealth and local authorities in interfacing with the PNPS ERO through the Offsite Liaisons and MEMA Technical Liaison.	The <u>Lead Offsite Liaison</u> is responsible for assisting the Commonwealth and local authorities in interfacing with the PNPS ERO through the Offsite Liaisons at the Plymouth EOC and MEMA Technical Liaison.	The complexity of communications with the local EOCs will be reduced. Therefore, PNPS proposes to eliminate Offsite Liaisons responding to the local EOCs, except for the Host town of Plymouth. Rather than dispatch liaisons to the each EOC, PNPS will establish a bridge line between the EOF and the Duxbury, Carver, Kingston, and Marshfield EOCs to maintain an open line of communications with ORO representatives in each EOC. The Lead Offsite Liaison in the EOF will be retained in the post-shutdown period, and will be responsible for establishing and maintaining communications with town representatives via a bridge line.
Part 2, Table B-1, On-shift Position No. Column	--	Numbers changed throughout table to match new on-shift positions.	These staffing levels have been evaluated in the PNPS analysis of proposed post-shutdown on-shift staffing in conjunction with the

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
			postulated accidents that will be applicable in a permanently defueled condition.
Part 2, Table B-1, Functional Area – Plant Operations	Shift Manager	Control Room Supervisor	Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one CRS and two NCOs. Title change for Shift Manager to CRS (qualified as a CFH) is dependent upon NRC approval of future changes to the PNPS Technical Specifications that will replace references to licensed operators with references to CFHs.
Part 2, Table B-1, Functional Area – Assessment of Operational Aspects	Control Room Supervisor Lic. Nuc. Plant Operator (2) Unlic. Nuc. Plant Operator (2)***FB	Control Room Supervisor Non-Certified Operator (NCO) (2)	Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one (1) Control Room Supervisor (CRS) and two (2) NCOs. Title change for Shift Manager to CRS (qualified as a Certified Fuel Handler (CFH)) is dependent upon NRC approval of future changes to the PNPS Technical Specifications that will replace references to licensed operators with references to CFHs.  The Fire Brigade complement will continue to consist of a minimum of five (5) responders, including a Fire Brigade Leader and a minimum of four (4) trained and qualified Fire

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
			Brigade Members in compliance with the PNPS fire protection program.
Part 2, Table B-1, Functional Area – Emergency Direction	Shift Manager	Control Room Supervisor	Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one CRS and two NCOs. Title change for Shift Manager to CRS (qualified as a CFH) is dependent upon NRC approval of future changes to the PNPS Technical Specifications that will replace references to licensed operators with references to CFHs.
Part 2, Table B-1, Functional Area – Emergency Control	Shift Manager Emergency Director Emergency plant Ops Supervisor (60-min augmenting responder)	Control Room Supervisor Emergency Director	<p>Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one CRS and two NCOs. Title change for Shift Manager to CRS (qualified as a CFH) is dependent upon NRC approval of future changes to the PNPS Technical Specifications that will replace references to licensed operators with references to CFHs.</p> <p>The position of Emergency Plant Operations Supervisor will not exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining positions on-shift positions.</p>

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
Part 2, Table B-1, Functional Area – Notification and Communication	Shift Manager Unlic. Nuc. Plant Operator Offsite Communicator EOF Communicator (60 min. augmenting responder) ENS Communicator	Control Room Supervisor NCO Offsite Communicator ENS Communicator (NCO)	Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one CRS and two NCOs. Title change for Shift Manager to CRS (qualified as a CFH) is dependent upon NRC approval of future changes to the PNPS Technical Specifications that will replace references to licensed operators with references to CFHs.  The position of EOF Communicator will not exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining positions within the EOF.  An NCO will serve as the ENS Communicator.
Part 2, Table B-1, Functional Area – Rad Accident Assessment	EOF Manager	Emergency Director	The position of EOF Manager will not exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining positions within the EOF.
Part 2, Table B-1, Functional Area – Ops Accident Assessment Support  Major Task – Offsite Dose Assessment	RP Technician*** Radio Chem Technician*** Radiological Assessment Coord	RP Technician*** Radiological Assessment Coord	PNPS will no longer be an operating nuclear power plant. The on-shift Radio Chemistry Technician position will be eliminated. Removal of the on-shift Radio Chemistry Technician position has been evaluated in the PNPS analysis of proposed post-shutdown on-shift staffing in conjunction with the postulated

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
			accidents that will be applicable in the permanently defueled condition.
Part 2, Table B-1, Functional Area – Ops Accident Assessment Support – Offsite Dose Assessment  Major Task – Onsite and In-plant Surveys	RP Technician RP Technician (2) (30-min augmenting responders) RP Technician (2) (60-min augmenting responders)	RP Technician RP Technician (60-min augmenting responder)	The elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions. Additionally, the duties and coverage required for the Radiation Protection Technician positions is reduced.
Part 2, Table B-1, Functional Area – Ops Accident Assessment Support – Chemistry/Radiochemistry  Major Task – Chemistry/Radiochemistry	Radio Chem Technician Radio Chem Technician (60 min. augmenting responder)	RP Technician	PNPS will no longer be an operating nuclear power plant. The augmenting and on-shift Radio Chemistry Technician position will be eliminated. Removal of the on-shift Radio Chemistry Technician position has been evaluated in the PNPS analysis of proposed post-shutdown on-shift staffing in conjunction with the postulated accidents that will be applicable in the permanently defueled condition.  Removal of the augmenting Chemistry Technician position does not impact the ability of the on-shift or ERO staff to perform dose assessment.
Part 2, Table B-1, Functional Area – Repair and Corrective Actions – Technical Support	Engineer (Shift Control Room) Engineer (Reactor) (30-min augmenting responder) Engineer (Mechanical) (60-min augmenting responder) Engineer (Electrical) (60-min	Engineering Coordinator (60-min augmenting responder)	PNPS will no longer be an operating nuclear power plant. The Shift Control Room Engineer position will be eliminated.  On-shift engineering oversight and

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
	augmenting responder)		<p>technical knowledge in this functional area will be transferred to the CRS/CFH. This transfer of duties has been evaluated in the PNPS analysis of proposed post-shutdown on-shift staffing in conjunction with the postulated accidents that will be applicable in the permanently defueled condition.</p> <p>The need to maintain an Engineer for core thermal/hydraulic assessment in the TSC is no longer applicable.</p> <p>The primary duties of the TSC Engineer positions, including: responding to engineering requests from the Engineering Coordinator, evaluating the implementation of Severe Accident Management Guidelines, and assisting the OSC in preparing to send repair teams into the plant. These duties, described in implementing procedures, are either no longer necessary in a permanently defueled condition or will be performed by other members of the post-shutdown ERO.</p>
Part 2, Table B-1, Functional Area – Repair and Corrective Actions – Corrective Actions	Nuclear Maint. Technician (60-min augmenting responder) Unlic. Nuc. Plant Operator Nuc. Plant Reactor Operator***FB Nuc. Plant Reactor Operator (60-min augmenting responder)	NCO Nuclear Maint. (Electrical) (60-min augmenting responder)	Title changes are dependent upon NRC approval of changes to the PNPS Technical Specifications that will replace references to licensed and non-licensed operators with references to CFHs and NCOs.

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
	<p>Nuclear Maint. (Electrical)(2) (30-min augmenting responder)</p> <p>Nuclear Maint. (Electrical) (60-min augmenting responder)</p> <p>Nuclear Control Technician (2) (30-min augmenting responder)</p>		<p>The spectrum of credible and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently defueled condition is also greatly reduced, which reduces the repair and corrective action activities the OSC must perform.</p> <p>The Fire Brigade complement will continue to consist of a minimum of five (5) responders, including a Fire Brigade Leader and a minimum of four (4) trained and qualified Fire Brigade Members in compliance with the PNPS fire protection program.</p>
<p>Part 2, Table B-1, Functional Area – Protective Actions (In Plant) – Radiation Protection, Access Control, RP Coverage, Personnel Monitoring, and Dosimetry</p>	<p>RP Technician (2)***</p> <p>RP Technician (2) (30-min augmenting responder)</p> <p>RP Technician (2) (60-min augmenting responder)</p>	<p>RP Technician***</p> <p>RP Technician (30-min augmenting responder)</p> <p>RP Technician (60-min augmenting responder)</p>	<p>The number of on-shift RP Technicians will be reduced to 1. Removal of the on-shift Chemistry Tech position has been evaluated in the PNPS analysis of proposed post-shutdown on-shift staffing in conjunction with the postulated accidents that will be applicable in the permanently defueled condition. Reduction in the number of augmenting RP Technicians is justified based on the limited areas where maintenance is required to maintain SFP cooling and areas that</p>

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
			could be potentially affected by an accident involving the SFP.
Part 2, Table B-1, Functional Area – Protective Actions (In Plant) – Fire Fighting	Fire Brigade*, (3***, 2 [NLO or Sec]) Plymouth Fire Dept.	Per the Fire Protection Plan Plymouth Fire Department	The Fire Brigade complement will continue to consist of a minimum of five (5) responders, including a Fire Brigade Leader and a minimum of four (4) trained and qualified Fire Brigade Members in compliance with the PNPS fire protection program.
Part 2, Table B-1, NOTES	On Shift Position #7 is Assistant to Offsite Communicator and can be replaced by an SRO that is qualified for the task.	On Shift Position #2 is Assistant to Offsite Communicator and can be replaced by a NCO that is qualified for the task.	Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one CRS and two NCOs.  On-shift position numbers changed to match new on-shift positions.
Part 2, Table B-1, NOTES	On Shift Position #11 can be filled by an RO or SRO that is qualified for the task.	On Shift Position #2 or #3 can be filled by a CFH that is qualified for the task.	Numbers changed to match new on-shift positions.  Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one CRS and two NCOs.
Part 2, Table B-1, NOTES	On Shift Positions #13 and #14 are available to support Shift Manager, where qualified, in non-fire events.	Deleted	Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one CRS and two NCOs.



## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
Part 2, Table B-1, NOTES <sup>^</sup>	This table B-1 is incorporated into the Emergency Plan in accordance with USNRC Generic Letter 82-33 dated 12/17/82 and incorporates within 30 days of approval the conclusions of the PNPS On Shift Staffing Analysis Report which is a part of the Emergency Plan in accordance with 10CFR50 Appendix E, Section IV. A. 9 and maintained as a separate document.	This table B-1 is incorporated into the Emergency Plan in accordance with USNRC Generic Letter 82-33 dated 12/17/82 and incorporates within 30 days of approval the conclusions of the PNPS Analysis of Proposed Post-Shutdown On-Shift Staffing which is a part of the Emergency Plan in accordance with 10CFR50 Appendix E, Section IV. A. 9 and maintained as a separate document.	PNPS will no longer be an operating nuclear power plant. The title change reflects the permanently defueled organizational structure.
Part 2, Figure B-1a	PNPS Emergency Response Organization Management Leads	Deleted the following: EOF Manager TSC Manager See Fig B-1b	The positions of EOF Manager and TSC Manager will no longer exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining positions within the respective facilities.
Part 2, Figure B-1b	Operations Emergency Organization	Deleted the figure	PNPS will no longer be an operating nuclear power plant. Following permanent cessation of operations and removal of fuel from the vessel, Operations on-shift personnel will consist of one CRS and two NCOs. Title changes are dependent upon NRC approval of changes to the PNPS Technical Specifications that will replace references to licensed and non-licensed operators with references to CFHs and NCOs.  These staffing levels have been evaluated in the PNPS analysis of proposed post-shutdown on-shift staffing in conjunction with the

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
			postulated accidents that will be applicable in the permanently defueled condition.
Part 2, Figure B-1c	Technical Support Organization	Defueled Technical Support Organization	PNPS will no longer be an operating nuclear power plant. The title change reflects the permanently defueled organizational structure.
Part 2, Figure B-1c	Technical Support Organization	<p>Replaced TSC Manager with Emergency Plant Manager</p> <p>Deleted the following positions:  Ops Engineer  SCRE  TSC Communicator  Electrical Engineer  I&amp;C Engineer  Mechanical Engineer  Reactor Engineer  IT Specialist</p> <p>Deleted NOTE: SCRE – Control Room Supervisor (SCRE)</p>	These positions will no longer exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining positions within the Technical Support Organization.
Part 2, Figure B-1d	Operations Support Organization	Defueled Operations Support Organization	PNPS will no longer be an operating nuclear power plant. The title change reflects the permanently defueled organizational structure.
Part 2, Figure B-1d	Operations Support Organization	<p>Deleted the following positions:  Ops Support  Logkeeper  Dosimetry Clerk  Work Control Coordinator  I&amp;C/Electrical Coordinator  Mechanical Coordinator  Rad/Chem Coordinator  I&amp;C Techs</p>	The spectrum of credible and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently defueled condition is also greatly reduced, which reduces

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
		Chem Tech Rad Data Communicator  Deleted NOTE: Rad Data Communicator only if SPDS is inoperable.	the repair and corrective action activities the OSC must perform.
		Deleted the Rad Data Communicator  Deleted NOTE: Rad Data Communicator only if SPDS is inoperable.	
Part 2, Figure B-1g	Emergency Operations Facility Organization	Deleted the following positions: EOF Manager Admin and Logistics Coordinator IT Specialist Public Information Liaison EOF Communicator Log Keeper  Changed: "Offsite Liaison(s)" to "Offsite Liaison" "Dose Assessors" to "Dose Assessor" "Located at Commonwealth and Local EOCs" to "Located at Commonwealth and Plymouth EOCs"	These positions will no longer exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining positions within the Emergency Response Organization.
Part 2, Figure B-1h	Emergency Public Information Organization	Deleted the following positions: JIC Technical Advisor Inquiry Response Coordinator Information Coordinator Technical Assistant Press Release Writer Media Assistant A/V Assistant Logistics Coordinator	These positions will no longer exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining positions within the JIC.

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
		Logkeeper Agency Coordinator Admin Team	
Part 2, Section C.2.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	At the Alert level and above, PNPS liaisons are dispatched to the Commonwealth and Plymouth EOCs to act as communications liaison and to provide clarification of emergency response information.	The complexity of communications with the local EOCs will be reduced. Therefore, PNPS proposes to eliminate Offsite Liaisons responding to the local EOCs, except for the Host town of Plymouth. Rather than dispatch liaisons to the each EOC, PNPS will establish a bridge line between the EOF and the Duxbury, Carver, Kingston, and Marshfield EOCs to maintain an open line of communications with ORO representatives in each EOC. The Lead Offsite Liaison in the EOF will be retained in the post-shutdown period, and will be responsible for establishing and maintaining communications with town representatives via a bridge line.
Part 2, Section C.2.c	N/A	Upon activation of the EOF, the Lead Offsite Liaison is responsible for establishing and maintaining communications with offsite representatives in the Duxbury, Carver, Kingston and Marshfield EOCs.	The complexity of communications with the local EOCs will be reduced. Therefore, PNPS proposes to eliminate Offsite Liaisons responding to the local EOCs, except for the Host town of Plymouth. Rather than dispatch liaisons to the each EOC, PNPS will establish a bridge line between the EOF and the Duxbury, Carver, Kingston, and Marshfield EOCs to maintain an open line of communications with ORO representatives in each EOC. The

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
			Lead Offsite Liaison in the EOF will be retained in the post-shutdown period, and will be responsible for establishing and maintaining communications with town representatives via a bridge line.
Part 2, Section F, Last Paragraph	This section further outlines the program for insuring...	This section further outlines the program for ensuring...	Editorial change
Part 2, Section F.1.c, 3 <sup>rd</sup> bullet	A cellular telephone is provided in the Shift Manager's office in the Control Room, TSC, OSC, CAS and SAS as a backup to the local commercial telephone system.	A cellular telephone is provided in the CRS's office in the Control Room, TSC, OSC, CAS and SAS as a backup to the local commercial telephone system.	Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one CRS and two NCOs. Command and control responsibilities will remain with the CRS (qualified as a CFH) regardless of location, until relieved by the Emergency Director.
Part 2, Section F.1.c, 4 <sup>th</sup> bullet	A satellite telephone is provided in the Shift Manager's office in the Control Room and EOF as a backup to the local commercial telephone system.	A satellite telephone is provided in the CRS's office in the Control Room and EOF as a backup to the local commercial telephone system.	Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one CRS and two NCOs. Command and control responsibilities will remain with the CRS (qualified as a CFH) regardless of location, until relieved by the Emergency Director.
Part 2, Section F.1.c	Separate communications methods exist among the various emergency response facilities in order to insure reliable and timely exchange of information.	Separate communications methods exist among the various emergency response facilities in order to ensure reliable and timely exchange of information.	Editorial change

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
Part 2, Section G.4.c	Rumors or misinformation are identified during an emergency by the Information Coordinator and Inquiry Response Coordinator located at the Joint Information Center. They respond to media calls and broadcasts and reports of misinformation or rumors are forwarded to the Inquiry Response Coordinator and Information Coordinator, and then forwarded to the JIC Manager and/or Company Spokesperson for an appropriate response by Joint Information Center staff. Rumor control is also provided for by the Commonwealth of Massachusetts Emergency Management Agency.	Rumors or misinformation are identified during an emergency. Reports of misinformation or rumors are forwarded to the JIC Manager and/or Company Spokesperson for an appropriate response by Joint Information Center staff. Rumor control is also provided for by the Commonwealth of Massachusetts Emergency Management Agency.	The positions of Inquiry Response Coordinator and Information Coordinator will no longer exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining positions within the JIC.
Part 2, Section H, Last Sentence	It also describes the surveillance programs used to monitor and insure...	It also describes the surveillance programs used to monitor and ensure...	Editorial change
Part 2, Section H.1, 1 <sup>st</sup> paragraph	The TSC and OSC are activated upon declaration of an Alert or above or at the discretion of the Emergency Director (ED) or Shift Manager.	The TSC and OSC are activated upon declaration of an Alert or above or at the discretion of the Emergency Director (ED) or CRS.	Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one CRS and two NCOs. Command and control responsibilities will remain with the CRS (qualified as a CFH) regardless of location, until relieved by the Emergency Director.
Part 2, Section H.1, 3 <sup>rd</sup> paragraph	The Control Room is staffed by Licensed Nuclear Plant Operators and Senior Licensed Nuclear Plant	The Control Room is staffed by Certified Fuel Handlers and Non-Certified Operators. All plant-	Following permanent cessation of power operations and permanent removal of fuel from the reactor

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
	Operators. All plant-related operations are directed from the Control Room and supervised by the Shift Manager.	related operations are directed from the Control Room and supervised by the CRS.	vessel, Operations on-shift personnel will consist of one CRS and two NCOs.  PNPS will no longer be an operating nuclear power plant. Title changes are dependent upon NRC approval of changes to the PNPS Technical Specifications that will replace references to licensed and non-licensed operators with references to CFHs and NCOs.
Part 2, Section H.1, 7 <sup>th</sup> paragraph	Specific personnel assignments are determined at the time of the emergency by the TSC Manager and the Operations Coordinator based on the type of incident occurring at the Station.	Specific personnel assignments are determined at the time of the emergency by the Emergency Plant Manager and the Operations Coordinator based on the type of incident occurring at the Station.	The position of TSC Manager will no longer exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining positions within the ERO.
Part 2, Section H.5, First Sentence	PNPS has put into place plans and procedures to insure...	PNPS has put into place plans and procedures to ensure...	Editorial change
Part 2, Section H.6, Last Sentence	Plans have been developed to insure...	Plans have been developed to ensure...	Editorial change
Part 2, Section H.6.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.	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 Main Stack, the Reactor Building Exhaust Ventilation and the Turbine Building are equipped with high range radiation monitoring systems designed to	PNPS will no longer be an operating nuclear power plant. With irradiated fuel being stored in the Spent Fuel Pool and the ISFSI, the Containment High Range Monitoring System will have no function.

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
	<p>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.</p> <p>The Containment High Radiation Monitoring System will be used to monitor the integrity of the reactor fuel and to assess core damage conditions during the emergency phase of an accident. Contingency chemistry sampling procedures are available as a supplemental means to confirm the integrity of the reactor fuel or core damage in support of post-accident and long-term recovery operations. The contingency chemistry procedures provide the appropriate instructions to obtain and analyze highly radioactive samples from the reactor coolant system and containment (i.e., drywell and torus).</p>	measure elevated radiation levels.	
Part 2, Section H.6.c	<p>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</p>	<p>The Control Room and applicable redundant backup locations are equipped with extensive plant process monitors for use in both normal and emergency conditions. This instrumentation provides the basis for initiation of corrective actions.</p>	<p>PNPS will no longer be an operating nuclear power plant. With irradiated fuel being stored in the Spent Fuel Pool and the ISFSI, the reactor, reactor coolant system and secondary system are no longer in operation and have no function.</p>



## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
	rates, status or lineup of equipment components. This instrumentation provides the basis for initiation of corrective actions.		
Part 2, Section H.12, Last Sentence	PNPS cooperates with local and Commonwealth officials to insure...	PNPS cooperates with local and Commonwealth officials to ensure...	Editorial change
Part 2, Section H.13	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.	Monthly surveillance and maintenance is performed to ensure the readiness of field monitoring equipment. Instrumentation and equipment utilized for activity determination are routinely calibrated to ensure timely availability.	Editorial change
Part 2, Section I.2, 1 <sup>st</sup> bullet	Contingency Chemistry Procedures - The Commission has approved and issued License Amendment 204 to PNPS that eliminates the requirement to have and maintain the Post Accident Sampling System (PASS) to support emergency response decisions during the initial phase of an accident (USNRC Letter Number 1.03.128, dated November 14, 2003). However, there is a significant benefit to having information from radioisotope sampling as a supplemental means to address decisions in support of long-term recovery operations under a severe accident condition. Therefore, contingency chemistry procedures are available to obtain and analyze highly radioactive	Deleted	PNPS will no longer be an operating nuclear power plant. With irradiated fuel being stored in the Spent Fuel Pool and the ISFSI, the reactor, reactor coolant system and secondary system are no longer in operation and have no function.

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
	<p>samples from the reactor coolant system and containment (i.e.; drywell and torus) when deemed appropriate or necessary to support decisions during long-term recovery operations. The sample results will be used to confirm the integrity of the reactor fuel or core damage conditions with other plant indicators such as Area Radiation and Process Radiation Monitors.</p>		
<p>Part 2, Section I.2, 3<sup>rd</sup> bullet</p>	<p>Containment High Radiation Monitoring System - A primary method to estimate core damage is based on radiation monitor readings from the Containment High-Radiation Monitoring System (CHRMS), which monitors the radiation levels inside the primary containment (Drywell and Torus areas). This is accomplished by comparing the radiation monitoring readings inside the primary containment with established Drywell and Torus CHRMS curves. The curves provide an estimate of the amount of core damage by plotting the detector dose rate response versus time after shutdown corresponding to various assumed source term scenarios. The assumed source term scenarios include full core melt, gap activity and spiked primary coolant releases.</p>	<p>Deleted</p>	<p>PNPS will no longer be an operating nuclear power plant. With irradiated fuel being stored in the Spent Fuel Pool and the ISFSI, the Containment High Range Monitoring System will have no function.</p>

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
Part 2, Section I.3.a	The potential for release of radioactive material and the magnitude of the release can be assessed through use of the Containment High Radiation Monitoring System (CHRMS) and Process Radiation Monitors. The Containment High Radiation Monitoring System readings can be used to estimate the percentage of core damage and establish the total number of curies available for release.	The potential for release of radioactive material and the magnitude of the release can be assessed through use of the Process Radiation Monitors.	PNPS will no longer be an operating nuclear power plant. With irradiated fuel being stored in the Spent Fuel Pool and the ISFSI, the Containment High Range Monitoring System will have no function.
Part 2, Section J.7, 3 <sup>rd</sup> Paragraph, 1 <sup>st</sup> Bullet	For a Rapidly Progressing Severe Accident (RPSA), a General Emergency distinguished by a rapid loss of containment integrity and loss of ability to cool the core, a plant-based PAR to evacuate the 2-mile ring and 5 miles downwind of the affected EPZ subareas along with sheltering of all other EPZ subareas will be recommended. The 5-10 downwind area will be re-evaluated for evacuation by the EOF, or	Deleted	PNPS will no longer be an operating nuclear power plant. With irradiated fuel being stored in the Spent Fuel Pool and the ISFSI, the possibility of a Rapidly Progressing Severe Accident distinguished by a rapid loss of containment integrity and loss of ability to cool the core no longer exists.
Part 2, Section J.7, 3 <sup>rd</sup> Paragraph, 2 <sup>nd</sup> Bullet	At a minimum, based on plant conditions, (for a non-RPSA) evacuation of the 2 mile ring and 5 miles downwind of the affected EPZ sub-areas along with sheltering of all other EPZ sub-areas will be recommended unless sheltering as an alternative to evacuation is recommended; or	At a minimum, based on plant conditions, evacuation of the 2 mile ring and 5 miles downwind of the affected EPZ sub-areas along with sheltering of all other EPZ sub-areas will be recommended unless sheltering as an alternative to evacuation is recommended; or	PNPS will no longer be an operating nuclear power plant. With irradiated fuel being stored in the Spent Fuel Pool and the ISFSI, the possibility of a Rapidly Progressing Severe Accident no longer exists.

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
Part 2, Section M.2	The Emergency Director, with concurrence from the EOF 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.	The Emergency Director, with concurrence from 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.	The position on EOF Manager will no longer exist in the Permanently Defueled ERO. Duties and responsibilities will be transferred to remaining positions within the ERO.
Part 2, Section M.2, 6 <sup>th</sup> and 7 <sup>th</sup> Bullets	<ul style="list-style-type: none"> <li>The reactor is in a stable shutdown condition and long term core cooling is available</li> <li>Drywell pressure is within Technical Specification limits.</li> </ul>	Deleted	PNPS will no longer be an operating nuclear power plant. The reactor will be permanently shut down and core cooling and drywell pressure will no longer be applicable.
Part 2, Section O.1, 1 <sup>st</sup> Paragraph	PNPS assures the training of appropriate company personnel through implementation of the Emergency Organization Training portion of the PNPS Nuclear Training Manual or EN-TQ-110, "Emergency Response Organization Training". The required training for the PNPS Emergency Response Organization (ERO) positions that are defined in Section B is described here.	PNPS assures the training of appropriate company personnel through implementation of the Emergency Organization Training portion of the PNPS Nuclear Training Manual or P-EN-TQ-110, "Emergency Response Organization Training". The required training for the PNPS Emergency Response Organization (ERO) positions that are defined in Section B is described here.	To reflect the change to the post-shutdown condition, the fleet procedure is changed to a site-specific procedure.
Part 2, Section O.4, 1 <sup>st</sup> Paragraph	PNPS Emergency Response Organization personnel who are responsible for implementing this Plan receive initial, specialized and annual requalification training. Detailed training matrices are maintained in NTM5.5, Emergency Response Organization Training, and EN-TQ-110-01, "Fleet EPlan Training Course Summary".	PNPS Emergency Response Organization personnel who are responsible for implementing this Plan receive initial, specialized and annual requalification training. Detailed training matrices are maintained in NTM5.5, Emergency Response Organization Training, and P-EN-TQ-110-01, "EPlan Training Course Summary".	To reflect the change to the post-shutdown condition, the fleet procedure is changed to a site-specific procedure.

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
Part 2, Section O.4.b, 1 <sup>st</sup> paragraph	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.	Plant Operators (Certified Fuel Handlers/Non-Certified Operators) receive routine classroom training to ensure proficiency in accident assessment.	PNPS will no longer be an operating nuclear power plant. Title changes are dependent upon NRC approval of changes to the PNPS Technical Specifications that will replace references to licensed and non-licensed operators with references to CFHs and NCOs.
Part 2, Section O.4.b, 3 <sup>rd</sup> & 4 <sup>th</sup> paragraphs	<p>Core Damage Assessment: During an emergency when core/cladding damage is suspected, a specialized group of trained individuals perform core damage assessment.</p> <p>At a minimum, personnel responsible for core damage assessment receive classroom and hands-on training in the following areas:</p> <ul style="list-style-type: none"> <li>• Isotopic Assessment and Interpretation</li> <li>• Available Instrumentation and Equipment</li> <li>• Computerized and Manual Core Damage Assessment</li> </ul>	Deleted	PNPS will no longer be an operating nuclear power plant. Core damage assessment is no longer required.
Part 2, Section O.5.b, 1 <sup>st</sup> paragraph	Prior to becoming a qualified PNPS Emergency Response Organization	Prior to becoming a qualified PNPS Emergency Response Organization	To reflect the change to the post-shutdown condition, the fleet

## Attachment 2 - PNPS Emergency Plan Change Summary

Emergency Plan Section	Before (Rev. 48)	After (Rev. TBD)	Reason for Change
	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 or EN-TQ-110, "Emergency Response Organization Training". Additionally, PNPS offers initial training to those offsite organizations that provide onsite support, as discussed in Part 1.a of this Section.	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 or P-EN-TQ-110, "Emergency Response Organization Training". Additionally, PNPS offers initial training to those offsite organizations that provide onsite support, as discussed in Part 1.a of this Section.	procedure is changed to a site-specific procedure.
Appendix 2	Procedure Cross-Reference to Sections of the Plan	Defueled Procedure Cross-Reference to Sections of the Plan	PNPS will no longer be an operating nuclear power plant. Title change reflects the permanently defueled condition.
Appendix 2	Procedure Cross-Reference to Sections of the Plan	Deleted references to the following: EP-IP-260, 9.2 for EOF Manager EP-IP-260, 9.5 for Administration and Logistics Coordinator EP-IP-260, 9.7 for EOF Communicator EP-IP-300 for Core Damage	These positions/functions no longer exist in the Permanently Defueled structure. Duties and responsibilities will be transferred to remaining positions within the ERO.

**Attachment 3**

Letter Number 2.18.004

Proposed Revisions to the PNPS Site Emergency Plan, Revision 48 (Marked-up Version)

# PNPS EMERGENCY PLAN

RType H8.22

## 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 Entergy Nuclear Operations, Inc., ("Entergy") 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 Executive. The Emergency Plan and its implementing procedures meet the requirements for quality assurance as set forth in the Entergy Quality Assurance Program Manual.

The Regulatory and Performance Improvement 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.

\_\_\_\_\_  
OSRC Chairman

Date: \_\_\_\_\_

\_\_\_\_\_  
Regulatory and Performance Improvement Director

Date: \_\_\_\_\_

\_\_\_\_\_  
General Manager, Plant Operations

Date: \_\_\_\_\_

\_\_\_\_\_  
Site Vice President (Senior Nuclear Executive)

Date: \_\_\_\_\_

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

Effective Date: \_\_\_\_\_



# PNPS EMERGENCY PLAN

## LIST OF EFFECTIVE PAGES

<u>Page</u>	<u>Revision</u>
i to ii .....	48TBD
iii to viii .....	48TBD
Section A.....	48TBD
Section B.....	48TBD
Section C .....	48TBD
Section D .....	48TBD
Section E.....	48TBD
Section F.....	48TBD
Section G .....	48TBD
Section H .....	48TBD
Section I.....	48TBD
Section J .....	48TBD
Section K.....	48TBD
Section L .....	48TBD
Section M .....	48TBD
Section N .....	48TBD
Section O .....	48TBD
Section P.....	48TBD
Appendix 1 .....	48TBD
Appendix 2 .....	48TBD
Appendix 3 .....	48TBD
Appendix 4 .....	48TBD

(Appendix 5 contained in separate volume)

# PNPS EMERGENCY PLAN

## Table of Contents

	<u>Page</u>
<b>Part 1: INTRODUCTION</b>	
Section A: Purpose.....	vii
Section B: Background.....	vii
Section C: Scope.....	viii
Section D: Planning Basis .....	viii
Section E: Form and Content of Plan .....	viii
<b>Part 2: PLANNING STANDARDS AND CRITERIA</b>	
<u>Section A: Assignment of Responsibility</u>	
1. Concept of Operations.....	A-1
2. Commonwealth and Local Functions and Responsibilities.....	A-9
3. Agreements in Planning Effort .....	A-9
4. Continuous Coverage .....	A-9
<u>Section B: Station Emergency Organization</u>	
1. PNPS Emergency Response Organization Assignments.....	B-1
2. Authority Over PNPS Emergency Response Organization .....	B-2
3. Succession to Emergency Director .....	B-2
4. Emergency Director Responsibilities.....	B-2
5. PNPS Emergency Response Organization .....	B-3
6. Emergency Response Organization Block Diagram.....	B-65
7. Corporate Emergency Response .....	B-65
8. Private Industry Support .....	B-65
9. Offsite Emergency Assistance to PNPS.....	B-65
<u>Section C: Emergency Response Support and Resources</u>	
1. Federal Response Support and Resources .....	C-1
2. Liaisons .....	C-1
3. Radiological Laboratories.....	C-2
4. Other Assistance .....	C-2
<u>Section D: Emergency Classification System</u>	
1. Emergency Classification.....	D-1
2. Emergency Action Levels.....	D-4
3. Offsite Classification Systems.....	D-4
4. Offsite Emergency Procedures .....	D-4
<u>Section E: Notification Methods and Procedures</u>	
1. Response Organization Notification .....	E-1
2. Notification and Mobilization of Emergency Response Personnel.....	E-1
3. Initial Notification.....	E-2
4. Follow-up Messages .....	E-2
5. Commonwealth and Local Information Dissemination.....	E-3
6. Notification of the Public .....	E-3
7. Messages to the Public.....	E-4

# PNPS EMERGENCY PLAN

## Table of Contents (Cont.)

	<u>Page</u>
<u>Section F: Emergency Communications</u>	
1. Communications/Notifications .....	F-1
2. Medical Communications .....	F-4
3. Communications Drills .....	F-4
<u>Section G: Public Education and Information</u>	
1. Public Information Publication .....	G-1
2. Public Education Materials .....	G-1
3. Joint Information Center .....	G-1
4. Coordination of Public Information .....	G-1
5. Media Orientation .....	G-2
<u>Section H: Emergency Facilities and Equipment</u>	
1. Technical Support Center (TSC), Operations Support Center (OSC), and the Control Room .....	H-1
2. Emergency Operations Facility (EOF) .....	H-2
3. Alternative Facility .....	H-2
4. Emergency Operations Centers (EOCs) and Incident Command Post (ICP) .....	H-3
5. Activation .....	H-4
6. Monitoring Equipment for Classification .....	H-4
7. Offsite Monitoring Equipment .....	H-54
8. Offsite Monitoring Equipment Storage .....	H-65
9. Meteorological Monitoring .....	H-6
10. Protective and Damage Control Equipment .....	H-6
11. Facility and Equipment Readiness .....	H-7
12. General Use Emergency Equipment .....	H-7
13. Collection Point for Field Samples .....	H-7
<u>Section I: Accident Assessment</u>	
1. Plant Parameters and Corresponding Emergency Classification .....	I-1
2. Onsite Accident Assessment Capabilities .....	I-1
3. Release Source Term Determination .....	I-21
4. Effluent Monitor Data and URI .....	I-2
5. Meteorological Information .....	I-2
6. Unmonitored Release .....	I-32
7. Field Monitoring .....	I-32
8. Offsite Monitoring Teams (OMTs) .....	I-32
9. Iodine Monitoring .....	I-32
10. Dose Estimates .....	I-3
11. Commonwealth Monitoring Capabilities .....	I-3



# PNPS EMERGENCY PLAN

## Table of Contents (Cont.)

	<u>Page</u>
<u>Section J: Protective Response</u>	
1. Notification of Onsite Personnel.....	J-1
2. Evacuation Locations.....	J-1
3. Radiological Monitoring.....	J-1
4. Evacuation.....	J-1
5. Accountability.....	J-2
6. Provisions for Onsite Personnel.....	J-2
7. Protective Action Recommendations for the General Public .....	J-3
8. Evacuation Time Estimates.....	J-43
9. Protective Measure Implementation.....	J-4
10. Factors Affecting Protective Measure Implementation .....	J-4
11. Ingestion Pathway Protective Measures .....	J-5
12. Monitoring of Evacuees .....	J-5
<u>Section K: Radiological Exposure Control</u>	
1. Emergency Exposure Guidelines.....	K-1
2. Emergency Radiation Protection Program .....	K-1
3. Personnel Monitoring .....	K-2
4. Non-PNPS Personnel Exposure Authorization.....	K-2
5. Decontamination and First Aid .....	K-2
6. Contamination Control .....	K-3
7. Decontamination of Relocated Personnel .....	K-3
<u>Section L: Medical and Public Health Support</u>	
1. Hospital Services .....	L-1
2. Onsite First Aid Capability.....	L-1
3. Medical Service Facilities.....	L-1
4. Medical Transportation .....	L-1
<u>Section M: Reentry and Recovery Planning</u>	
1. Reentry .....	M-1
2. Recovery.....	M-2
3. Recovery Phase Notifications .....	M-5
4. Total Population Exposure.....	M-5
<u>Section N: Drill and Exercise Program</u>	
1. Exercises/Drills .....	N-1
2. Specialized Drills.....	N-2
3. Conduct of Drills and Exercises .....	N-3
4. Criteria and Evaluation.....	N-3
5. Resolution of Drill and Exercise Findings .....	N-3
<u>Section O: Emergency Response Training</u>	
1. Assurance of Training .....	O-1
2. Classroom and Hands-On Training.....	O-1
3. First Aid Response.....	O-2
4. PNPS Emergency Response Organization Training Program.....	O-2
5. General, Initial and Annual Training Program Maintenance .....	O-5

# PNPS EMERGENCY PLAN

## Table of Contents (Cont.)

	<u>Page</u>
<u>Section P: Responsibility for the Maintenance of the Planning Effort</u>	
1. Emergency Planning Staff .....	P-1
2. Authority for Emergency Preparedness Effort.....	P-1
3. Regulatory and Performance Improvement Director .....	P-1
4. PNPS Emergency Plan Revisions.....	P-5
5. Emergency Plan Distribution.....	P-5
6. Supporting Emergency Response Plans.....	P-6
7. Implementing and Supporting Procedures .....	P-6
8. Cross Reference to Planning Criteria.....	P-6
9. PNPS Emergency Preparedness Program Review.....	P-6
10. Maintenance of the PNPS Emergency Telephone Directory .....	P-6

### **Part 3: APPENDICES**

Appendix 1: References.....	Appendices-1
Appendix 2: Procedure Cross-Reference to Sections of the Plan .....	Appendices-3
Appendix 3: Sample Copies of Letters of Agreements .....	Appendices-5
Appendix 4: Glossary of Terms.....	Appendices-12
Appendix 5: Evacuation Time Estimates .....	Appendices-14



# PNPS EMERGENCY PLAN

## Part 1: INTRODUCTION

### Section A: Purpose

This document describes the emergency preparedness program for Entergy's Pilgrim Nuclear Power Station (PNPS). The terms "PNPS" and "plant" as used in this document include the Independent Spent Fuel Storage Installation (ISFSI), except where it is obvious by usage or context that the term only applies to the power plant. The term "facility," when used to describe the nuclear power plant also includes the ISFSI. 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. ~~The plant is a General Electric Boiling-Water Reactor (BWR) design and produces a net electrical output of 689 megawatts.~~ A detailed description of the plant is given in the PNPS Final Safety Analysis Report (FSAR). The ISFSI consists of HI-STORM vertical dry spent fuel storage casks on a concrete slab located within the protected area. A detailed description of the HI-STORM storage casks is given in the HI-STORM 100 Cask System 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.

10 CFR 72.32 specifies the regulatory requirements for an ISFSI emergency plan. In accordance with 10 CFR 72.32(c), the emergency plan ~~for a nuclear power reactor~~ required by 10 CFR 50.47 satisfies the requirements for an emergency plan for an ISFSI which is located within the exclusion area of the nuclear power reactor, and therefore a separate ISFSI emergency plan is not required.

# PNPS EMERGENCY PLAN

## **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 Response Planning and Preparedness for Nuclear Power Reactors," 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.

This plan was developed in coordination with the Commonwealth of Massachusetts' Comprehensive Emergency Response Plan, Hazard Annex: "Radiological Emergency Response" 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 in a manner 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



# PNPS EMERGENCY PLAN

## **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 National Response Framework (NRF) is a guide to how the Nation conducts all-hazards response. It is built upon scalable, flexible, and adaptable coordinating structures to align key roles and responsibilities across the Nation. It also describes specific authorities and best practices for managing incidents that range from the serious but purely local, to large-scale terrorist attacks or catastrophic natural disasters. The NRF does not alter the NRC's independent authority or impede its ability to respond to events involving NRC-licensed facilities or materials. As outlined in the Nuclear/Radiological Incident Annex, the NRC is responsible to: (a) independently assess facility conditions and monitor licensee response activities; (b) ensure that appropriate protective action recommendations are communicated to the Commonwealth and local officials; (c) keep the public informed of the NRC's understanding of the event; and, (d) if necessary, the Chairman may invoke his authority to intervene and issue orders that may direct the licensee's response activities on-site.

The NRF is supported by annexes, including the Emergency Support Functions Annex, Support Annexes, and Incident Annexes for specific types of incidents. The annexes provide concepts of operations, procedures, and structures to assist partners with their respective response directives in fulfilling their roles under the NRF.

The Nuclear/Radiological Incident Annex to the NRF states that the NRC is the Coordinating Agency for events occurring at NRC-licensed facilities and for radioactive materials licensed either by the NRC or under the NRC's Agreement States Program. As Coordinating Agency, NRC has technical leadership for the Federal government's response to the event.

The primary Federal response at PNPS supporting an emergency includes:

- 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.



## PNPS EMERGENCY PLAN

- 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.
- Department of Homeland Security(DHS)/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 Taunton, MA.

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.

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

- MEMA State Emergency Operations Center (SEOC)
  - Activates and manages the MEMA Headquarters EOC and activates Public Alert Notification System and 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.
  - Assists in coordination and implementation of protective actions in conjunction with MEMA.

## PNPS EMERGENCY PLAN

- Massachusetts Department of Transportation (MDOT)
  - 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 Conservation and Recreation (DCR)
  - Provides emergency notification in state parks.
- Massachusetts Department of Agricultural Resources
  - Controls contaminated foodstuffs.
  - Maintains list of agricultural facilities within the Ingestion Exposure Pathway EPZ.
- Massachusetts Department of Fish and Game
  - Collects shellfish samples within the Ingestion Exposure Pathway EPZ.
  - Controls contaminated aquatic foods.

MEMA Region II, Bridgewater, supports community response and coordinates integrated community functions. It coordinates information and resources between the Commonwealth and communities. The MEMA Region 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
    - Activates and coordinates the State Police Traffic Control Plan.
  - Massachusetts Department of Transportation Districts 4 and 5
    - Coordinates Commonwealth traffic and access control equipment support.
    - Assists local public works departments to assure that roads remain passable.

## PNPS EMERGENCY PLAN

- Massachusetts National Guard
  - Coordinates National Guard transportation resources.
  - Coordinates National Guard support for traffic and access control, and security for evacuated areas.
  - Supports MEMA Region II EOC operations.
  - American 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.
  - Provides technical guidance to state agencies.
- 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.



## PNPS EMERGENCY PLAN

- 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.
  - 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.

## PNPS EMERGENCY PLAN

- 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.
- Operations Officer
  - Coordinates EOC operations.
  - Assists EOC staff in resolving operational problems.
  - Ensures EOC staff is updated on events.

## PNPS EMERGENCY PLAN

- 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 Joint Information Center.
  - Provides for rumor control on town-specific response actions.
- Shelter Officer
  - Coordinates operations of public shelters.

### Industry/Private Organizations

- Beth Israel Deaconess Hospital - Plymouth, located in Plymouth, is the primary care facility for treatment of contaminated injured persons, and for evaluation of radiation exposure 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 injury may be taken to a hospital as designated by MDPH.
- Entergy Corporate has available all company resources for acquiring help from non-affected Entergy nuclear sites and other industry and private organizations. This will include providing all available assistance to maximize corporate management, administrative and technical support for mitigating accident conditions and restoring PNPS to a safe condition. This support also may involve providing technical expertise in areas of engineering, design or construction to assist with unique or complex problems, and requesting specialized services or equipment such as environmental monitoring, whole body counting, and personnel monitoring in support of PNPS emergency response and recovery operations.



## PNPS EMERGENCY PLAN

- 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.
- 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 Director, 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 Figures B-1 a through h.
- 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.

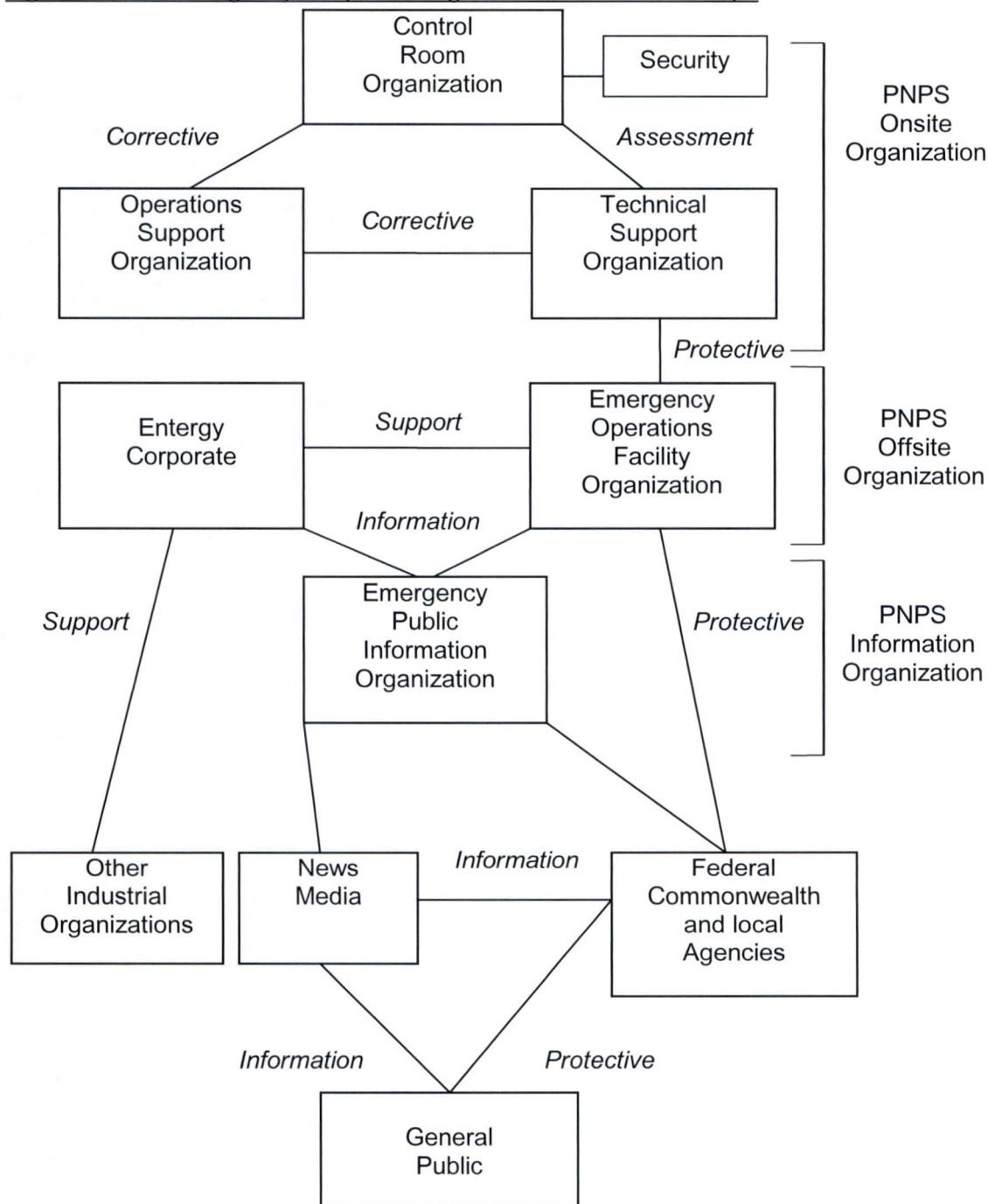
## PNPS EMERGENCY PLAN

- 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, and 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 Regulatory and Performance Improvement 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.



# PNPS EMERGENCY PLAN

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 make the facility operational, 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 Executive having overall authority for Station operations (the Shift Manager/Control Room Supervisor (CRS) always retains the responsibility for actual operation of plant systems). The Senior Nuclear Executive 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. EN-EP-801, Emergency Response Organization, outlines Emergency Plan Implementing Procedures outline position responsibilities 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 EN-EP-801.~~

- a. The Emergency Director is a member of the PNPS senior management staff.

- The *Radiological Assessment Coordinator* is normally from the Radiation Protection Group or Plant Management Staff.
- The Offsite Communicator is normally selected from Plant Management Staff (any management level supervisor who has communication skills and can coordinate emergency communication efforts may be used to fill this position).
- The Offsite and MEMA Technical Liaisons are members of Plant Management Staff and/or support organizations.
- The Lead Offsite Liaison is a Senior Engineer or a designated alternate from Plant Management Staff.

- b. The Emergency Plant Manager is a member of the PNPS senior management staff.

- ~~• The Emergency Plant Operations Supervisor is a member of Plant Operations who holds an operator's license on PNPS.~~
- ~~• The Technical Support Center Manager is assigned from Plant Management Staff.~~

## PNPS EMERGENCY PLAN

- The *Operations Support Center Manager* is assigned from Plant Management Staff.
- The *TSC Security Coordinator* is assigned from Security Management Staff.
- The *Radiological Coordinator* is the Radiation Protection Manager or a designated senior member of Radiation Protection.



## PNPS EMERGENCY PLAN

c. ~~The EOF Manager is a member of the PNPS senior management staff or designated alternate from PNPS staff.~~

- ~~• The Offsite Communicator is normally selected from Plant Management Staff (any management level supervisor who has communication skills and can coordinate emergency communication efforts may be used to fill this position).~~
- ~~• The Admin and Logistics Coordinator is normally a member of Plant Management Staff.~~
- ~~• The Offsite and MEMA Technical Liaisons are members of Plant Management Staff and/or support organizations.~~
- ~~• The Lead Offsite Liaison is a Senior Engineer or a designated alternate from Plant Management Staff.~~

dc. The Company Spokesperson is a senior member of the Plant Management Staff.

- The *JIC Manager* is a member of Plant Management Staff familiar with Joint Information 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 ~~Shift ManagerCRS, or in his absence from the Control Room, the available on-shift Senior Reactor Operator (SRO)~~ assumes the position of Emergency Director until the Senior Nuclear Executive or a designated alternate arrives at the Emergency Operations Facility and assumes the position.

3. Succession to Emergency Director: Initially, the ~~Shift ManagerCRS or the available on-shift Senior Reactor Operator (SRO)~~ assumes the duties and responsibilities as the Emergency Director. When augmentation of the on-shift complement occurs, the Senior Nuclear Executive or designated alternate reports to the EOF and, once briefed, relieves the ~~Shift ManagerCRS~~ 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 RoomCRS~~ 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.
- Approve notifications/communications to local, Commonwealth, and Federal government agencies and ensure that correct notifications and information updates are made in a timely manner. This responsibility is NON-DELEGABLE. (Note: approval is not required for NRC notifications once ENS is established or NRC is present.)
- Provide Protective Action Recommendations (PARs) to authorities responsible for protection of the general public. This responsibility is NON-DELEGABLE.

## PNPS EMERGENCY PLAN

- Terminate the event and initiate the recovery phase. This responsibility is NON-DELEGABLE.
- At an Alert or higher classification (or when the EOF is operational), authorize PNPS press releases. This responsibility is NON-DELEGABLE.
- Ensure other organization's management/decision makers (NRC, Entergy Corp, etc.,) are kept informed of the emergency situation.
- Monitor plant status following a security or other event affecting plant and personnel safety to ensure ERO response and mobilization remains appropriate.
- Ensure appropriate emergency procedures are implemented.
- Ensure all PNPS emergency response facilities are operational and properly staffed.
- Authorize required assistance from corporate and/or offsite organizations and agencies.
- Interface with NRC and FEMA response teams located at the EOF and other PNPS facilities.
- Authorize radiation exposures for offsite PNPS emergency workers in excess of 10CFR20 limits and use of potassium iodide as a thyroid blocking agent. This responsibility rests with 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 EOF Manager,~~ and the Company Spokesperson report directly to the Emergency Director, as do the Radiological Assessment Coordinator, the EOF Technical Advisor and the ICP Security Coordinator.

### 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 ~~Shift Manager~~CRS 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.
- Waive initial requirements for access authorization to PNPS. This responsibility is NON-DELEGABLE
- Protective actions for onsite PNPS personnel, including directing site evacuation activities, authorizing emergency exposures in excess of lower 10 CFR20 limits and use of potassium iodide. (non-delegable)
- Determination of emergency responder's ability to perform their assigned duties under Fitness For Duty criteria at PNPS.

The Emergency Plant Manager interfaces with the Emergency Director. The Emergency Plant Manager is normally located in the Technical Support Center.



## PNPS EMERGENCY PLAN

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 Shift Manager 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 Manager, Operations Support Center Manager, Radiological Coordinator and the TSC Security Coordinator.

The Technical Support Center Manager 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 Manager is responsible for the activation and proper staffing of the TSC. This includes augmentation of engineering staff, as needed.

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

The Operations Support Center Manager 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 Work Control Coordinator to provide~~s for maintenance of accountability for operations personnel dispatched into the plant during the emergency and works with the Emergency Plant Manager in the TSC to provide for appropriate prioritization and dispatch. The Operations Support Center Manager 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 Manager interfaces with the ~~Technical Support Center Manager,~~ Emergency Plant Manager, ~~Emergency Plant Operations Supervisor, Rad/Chem Coordinator,~~ TSC Security Coordinator and the ~~Admin and Logistics Coordinator~~ EOF Technical Advisor.

The Radiological Coordinator 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 ~~Shift Manager~~ CRS, the on-shift Radiation Protection Supervisor/Technician performs the duties of Radiological Coordinator until relieved.

The Radiological Coordinator interfaces with the Emergency Plant Manager and the Technical Support Center Manager, the Operations Support Center Manager ~~and the Rad/Chem Coordinator~~.

The TSC Security Coordinator 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 TSC Security Coordinator keeps the Emergency Plant Manager informed of all security concerns as they pertain to mitigation of the emergency. In addition, the TSC Security Coordinator coordinates the security activities of all Pilgrim Station emergency response facilities, and coordinates with the ~~Admin and Logistics Coordinator~~ EOF Technical Advisor regarding security in the JIC. Initially, the Lead Security Shift Supervisor performs the duties of the TSC Security Coordinator until relieved.



## PNPS EMERGENCY PLAN

The TSC Security Coordinator interfaces with ~~the Emergency Plant Operations Supervisor,~~ the Operations Support Center Manager, ~~the Emergency Plant Manager,~~ ~~the Technical Support Center Manager,~~ the ~~Admin and Logistics Coordinator~~EOF Technical Advisor, the Emergency Director and the ICP Security Coordinator in response to events involving security threats to the site or site personnel.

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

- ~~• Determination of emergency responders' ability to perform their assigned duties under Fitness for Duty criteria at the EOF following emergency response activation.~~
- ~~• Interface with Entergy Corporate 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.~~
- ~~• Assurance of timely communications with local, Commonwealth, and federal agencies after activation of the EOF following emergency response activation.~~
- ~~• Coordination of additional support and resources from corporate through the Admin and Logistics Coordinator and from offsite through the Emergency Director.~~

The Radiological Assessment Coordinator 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 Assessors, the Offsite Monitoring Team Coordinator and Offsite Monitoring Teams and is the Emergency Director's radiological advisor. The Radiological Assessment Coordinator is responsible for radiological exposure controls for all PNPS response personnel outside the Protected Area.

The Radiological Assessment Coordinator interfaces with the EOF Technical Advisor and the Radiological Coordinator.

The Offsite Communicator is responsible for performing offsite communications and notifications with Federal, Commonwealth, State and local emergency organizations and distributing information and forms.

The ~~Admin and Logistics Coordinator~~EOF Technical Advisor is responsible for initial and relief staffing during an extended emergency and logistical support (food, transportation, equipment maintenance, etc.) and for securing the Emergency Operations Facility. The ~~Admin and Logistics Coordinator~~EOF Technical Advisor coordinates with ~~the EOF Manager~~Entergy Corporate as necessary to obtain additional resources ~~from Entergy Corporate~~.

The ~~Admin and Logistics Coordinator~~EOF Technical Advisor interfaces with the Emergency Plant ManagerTechnical Support Center Manager, the Operations Support Center Manager, the Emergency Director, ~~the EOF Manager~~, and the TSC Security Coordinator.

The Lead Offsite Liaison is responsible for assisting the Commonwealth and local authorities in interfacing with the PNPS ERO through the Offsite Liaisons at the Plymouth EOC and MEMA Technical Liaison.

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 Joint Information



## PNPS EMERGENCY PLAN

Center (JIC) 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 JIC Manager, Emergency Director and Public Information Officers from Commonwealth and Federal government agencies.

The JIC Manager is responsible for the efficient operation of the PNPS public information effort at the Joint Information 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: Entergy Corporate provides support to the PNPS Emergency Response Organization. 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.
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, including those resulting from hostile actions at the station:
  - a. The Plymouth Fire Department has agreed, as requested by the PNPS Control Room to Plymouth Fire, to provide:
    - Fire protection assistance for the site.
    - Coordination of emergency ambulance services including ambulances and emergency medical technicians as well as the transport of contaminated and injured personnel or radiation injury victims.
    - 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, as requested by the PNPS Control Room or Security to Plymouth Police, to provide local law enforcement as described in a separate agreement maintained by PNPS Security and Plymouth Police, and to:
    - Control access on town roads in the vicinity of the site, including the erection of barricades on Rocky Hill Road if needed.



## PNPS EMERGENCY PLAN

- Initiate evacuation of the public from the site.
- Provide offsite storage of emergency equipment.

## PNPS EMERGENCY PLAN

- c. Beth Israel Deaconess Hospital - Plymouth and Morton Memorial Hospitals have agreed to provide medical treatment to contaminated and injured personnel or radiation injury 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. The Town of Carver has agreed to provide facilities for the PNPS Alternate Emergency Operations Facility.
- e. Bridgewater State University provides facilities for the PNPS Alternate Joint Information Center.

Sample copies of these letters of agreement are displayed in Appendix 3 of this Plan. The original letters are maintained in the Emergency Planning files. Letters of Agreement are renewed annually or at a frequency prescribed in the document.

# PNPS EMERGENCY PLAN

Table B-1: Minimum Staffing Requirements for the PNPS ERO <sup>(A)</sup>

Functional Area	Major Task	Onshift Pos.No.	Position Title	Response
Plant Operations	Plant Stabilization	1	<del>Shift Manager</del> <u>Control Room Supervisor</u>	On Shift#
Assessment of Operational Aspects	Accident Mitigation	<del>2(1)</del> <del>3,4</del> <del>5,6,2,3</del>	Control Room Supervisor <del>Lic. Nuc. Plant Operator (2)</del> <del>Unlic. Nuc. Plant Operator (2)***FB</del> <del>Non-Certified Operator (NCO) (2)</del>	On Shift# <del>On Shift#</del> On Shift#
Emergency Direction	Emergency Classification	(1)	<del>Shift Manager</del> <u>Control Room Supervisor</u>	On Shift#
Emergency Control	PARs	(1)	<del>Shift Manager</del> <u>Control Room Supervisor</u> Emergency Director <del>Emergency Plant Ops Supv</del>	On Shift# 60 min. <del>60 min.</del>
Notification and Communications	Notification of PNPS, Local, Commonwealth, and Federal personnel and Maintain Communications	(1) <del>7(2)</del>  (2)	<del>Shift Manager</del> <del>Control Room Supervisor</del> <del>Unlic. Nuc. Plant Operator</del> <u>NCO</u> Offsite Communicator <del>EOF Communicator</del> ENS Communicator ( <u>NCO</u> )	On Shift# On Shift# 30 min. <del>60 min.</del> <u>On Shift#</u> <del>60 min.</del>
Rad Accident Assessment	EOF Direction		<del>EOF Manager</del> <u>Emergency Director</u>	60 min.
Ops Accident Assessment Support	Offsite Dose Assessment	<del>(8)4</del> (9)	RP Technician*** <del>Radio Chem. Technician***</del> Radiological Assessment Coord	On Shift# <del>On Shift#</del> 30 min.
	Offsite Surveys		OMT Member (2) OMT Member (2)	30 min. 60 min.
	Onsite and In-plant Surveys	<del>8(4)</del>	RP Technician <del>RP Technician (2)</del> <del>RP Technician (2)</del>	On Shift# <del>30 min.</del> 60 min.
	Chemistry / Radiochemistry	<del>9(4)</del>	<del>Radio Chem. RP Technician</del> <del>Radio Chem. Technician</del>	On Shift# <del>60 min.</del>
Plant System Engineering	TSC / OSC Direction		Emergency Plant Manager	60 min.
Repair and Corrective Actions	Technical Support	<del>10</del>	<del>Engineer (Shift Control Rm)*</del> <del>Engineer (Reactor)</del> <del>Engineer (Mechanical)</del> <del>Engineer (Electrical)</del> <u>Engineering Coordinator</u>	<del>On Shift#</del> <del>30 min.</del> <del>60 min.</del> 60 min.
	Equipment Repairs		Nuclear Maint. Technician	30 min.
	Corrective Actions	<del>11(3)</del> <del>12</del>	<del>Nuclear Maint. Technician</del> <del>Unlic. Nuc. Plant Operator</del> <u>NCO</u> <del>Nuc. Plant Reactor Operator***FB</del> <del>Nuc. Plant Reactor Operator</del> <del>Nuclear Maint. (Electrical)(2)</del> Nuclear Maint. (Electrical) <del>Nuclear Control Technician(2)</del>	<del>60 min.</del> On Shift# <del>On Shift#</del> <del>60 min.</del> <del>30 min.</del> 60 min. <del>30 min.</del>
Protective Actions (In Plant)	Radiation Protection, Access Control, RP Coverage, Personnel Monitoring, and Dosimetry	<del>(84), (9)</del>	RP Technician <del>(2)</del> *** RP Technician <del>(2)</del> RP Technician <del>(2)</del>	On Shift# 30 min. 60 min.
	Fire Fighting	<del>13, 14</del>	<del>Fire Brigade*, (3 ***, 2 [NLO or Sec])</del> <u>Per the Fire Protection Plan</u> Plymouth Fire Dept.	On Shift# On Call
	Rescue Ops and First Aid		EMP**** 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.
- \*\*\* May be provided by shift personnel assigned other functions.

# PNPS EMERGENCY PLAN

\*\*\*\* (EMP) Emergency Medical Personnel: individuals qualified as EMTs, RNs, First Responders, or Paramedics per PNPS Procedure 5.5.3.

NOTES: Response times are based on optimum travel conditions.

On Shift Position #7-2 is Assistant to Offsite Communicator and can be replaced by ~~an SRO~~ NCO that is qualified for the task.

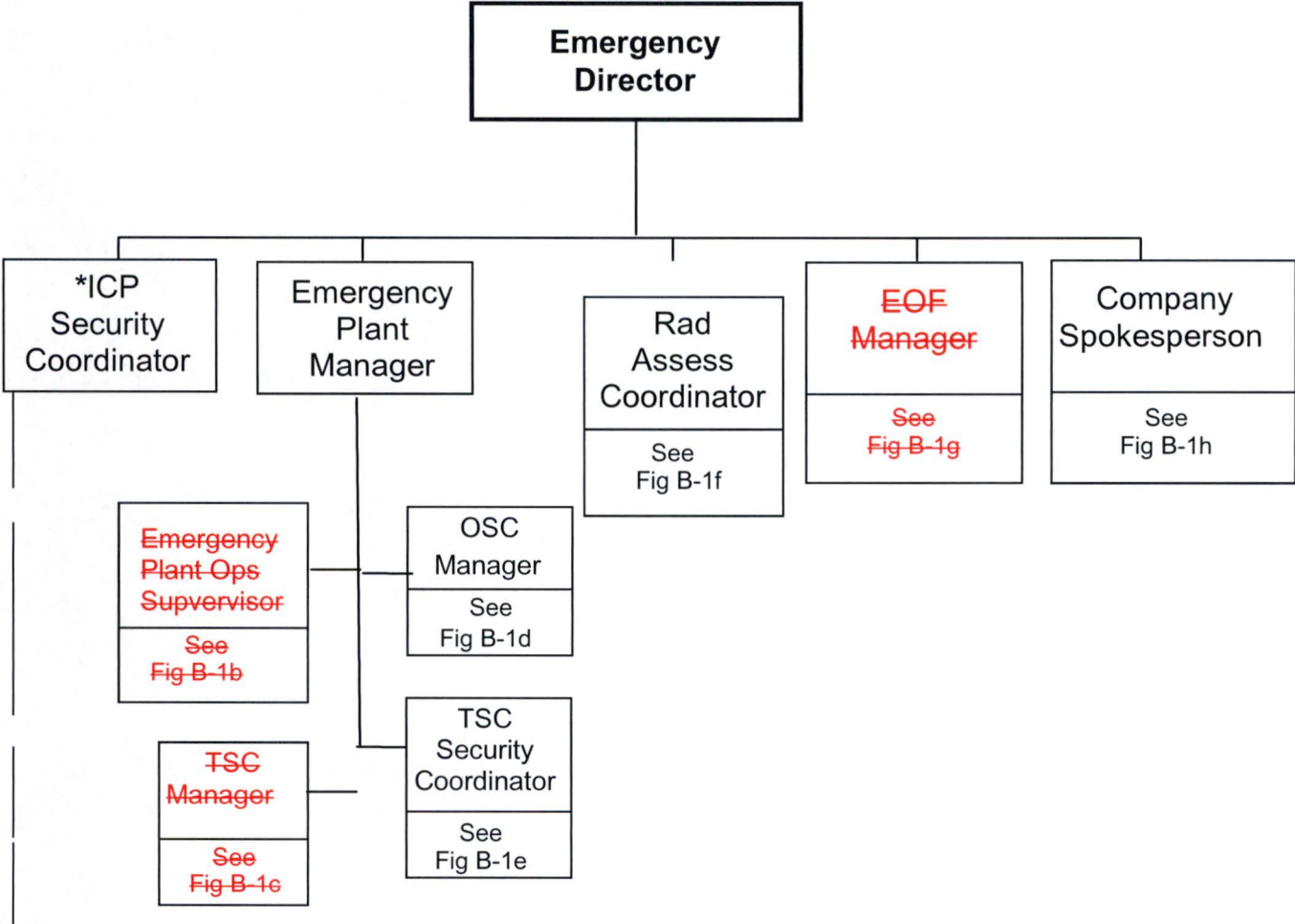
On Shift Position #11-2 or 3 can be filled by ~~an RO or SRO~~ NCO that is qualified for the task

~~On Shift Positions #13 and #14 are available to support Shift Manager, where qualified, in non-fire events.~~

(^\*) This table B-1 is incorporated into the Emergency Plan in accordance with USNRC Generic Letter 82-33 dated 12/17/82 and incorporates within 30 days of approval the conclusions of the PNPS Analysis of Proposed Post-Shutdown On Shift Staffing ~~Analysis Report~~ which is a part of the Emergency Plan in accordance with 10CFR50 Appendix E, Section IV. A. 9 and maintained as a separate document.

# PNPS EMERGENCY PLAN

Figure B-1a: PNPS Emergency Response Organization Management Leads

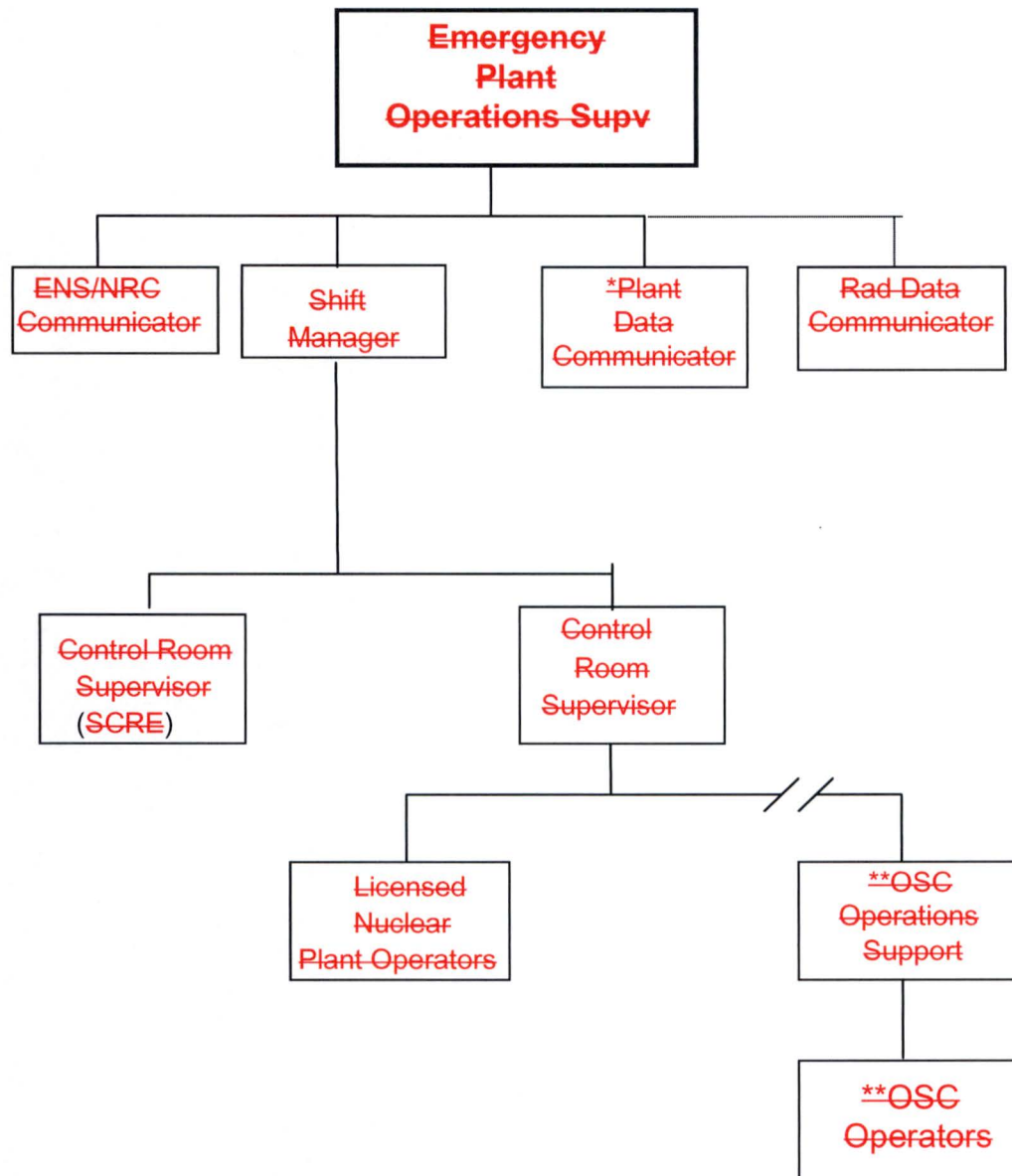


\* Hostile Action Based Events Position



## PNPS EMERGENCY PLAN

Figure B-1b: Operations Emergency Organization

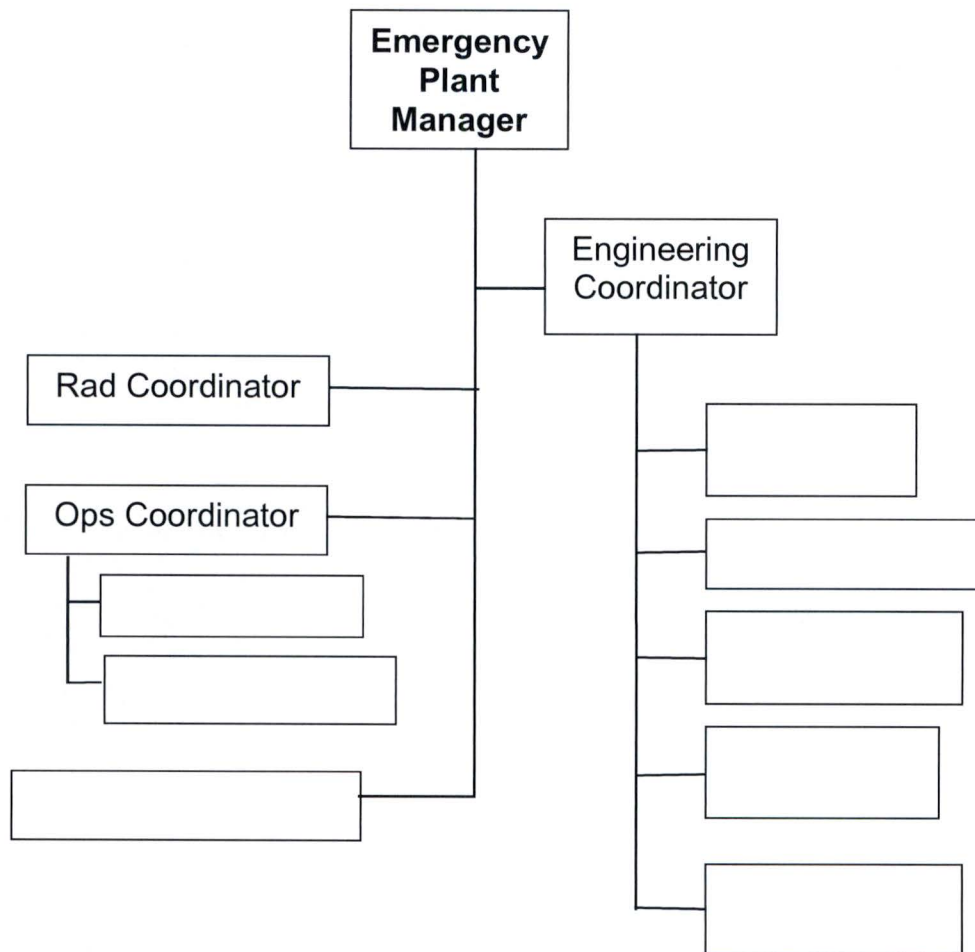


\* Required if SPDS is inoperable

\*\* Located in the OSC

## PNPS EMERGENCY PLAN

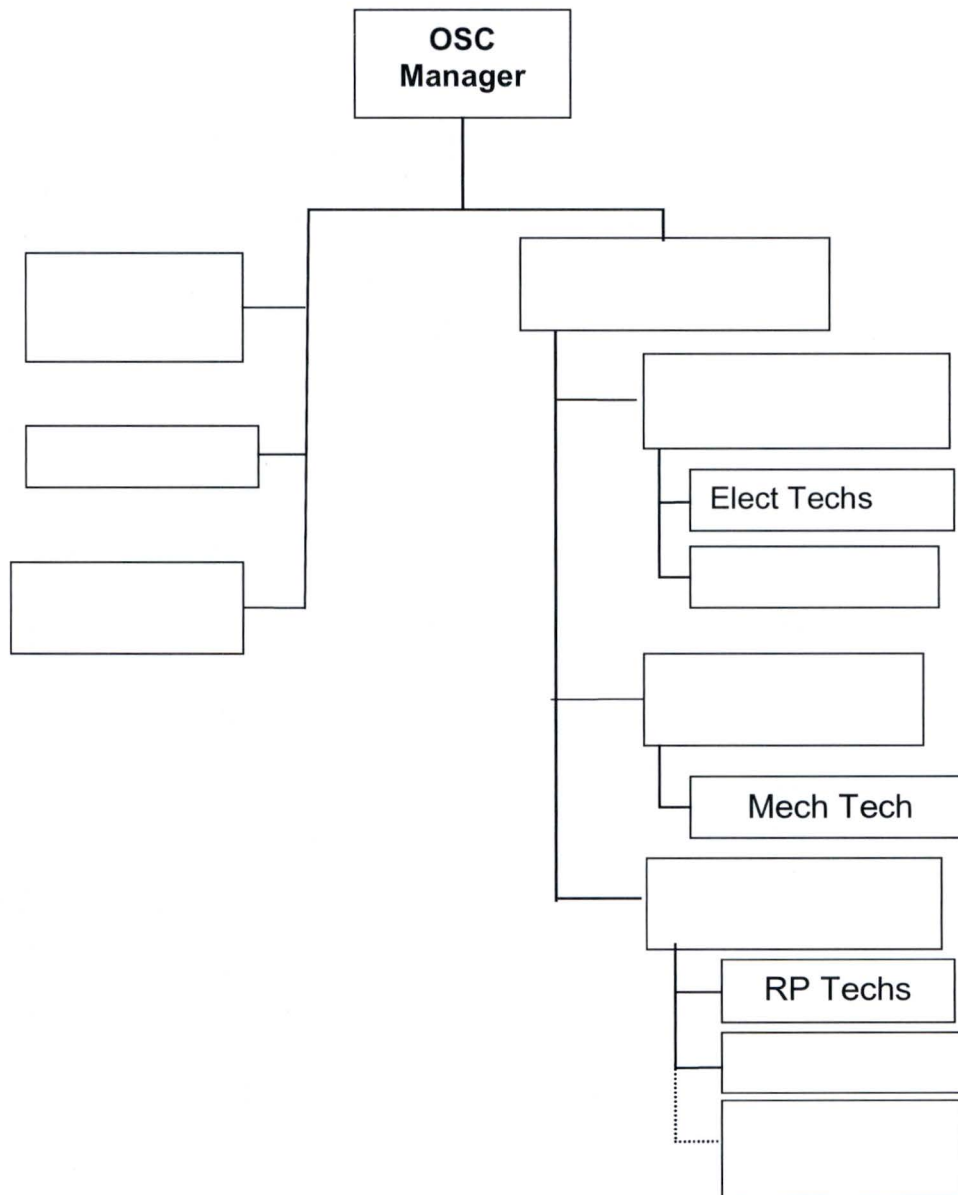
Figure B-1c: Defueled Technical Support Organization



Additional Engineering personnel may be called in based on the nature of the event.

# PNPS EMERGENCY PLAN

Figure B-1d: ~~Defueled~~ Operations Support Organization

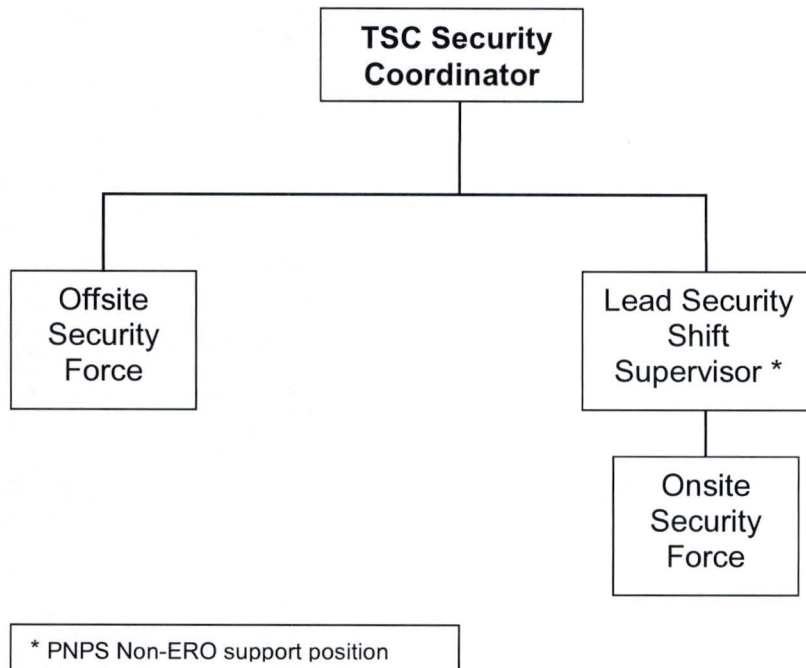


\* ~~Rad Data Communicator only if SPDS is inoperable~~



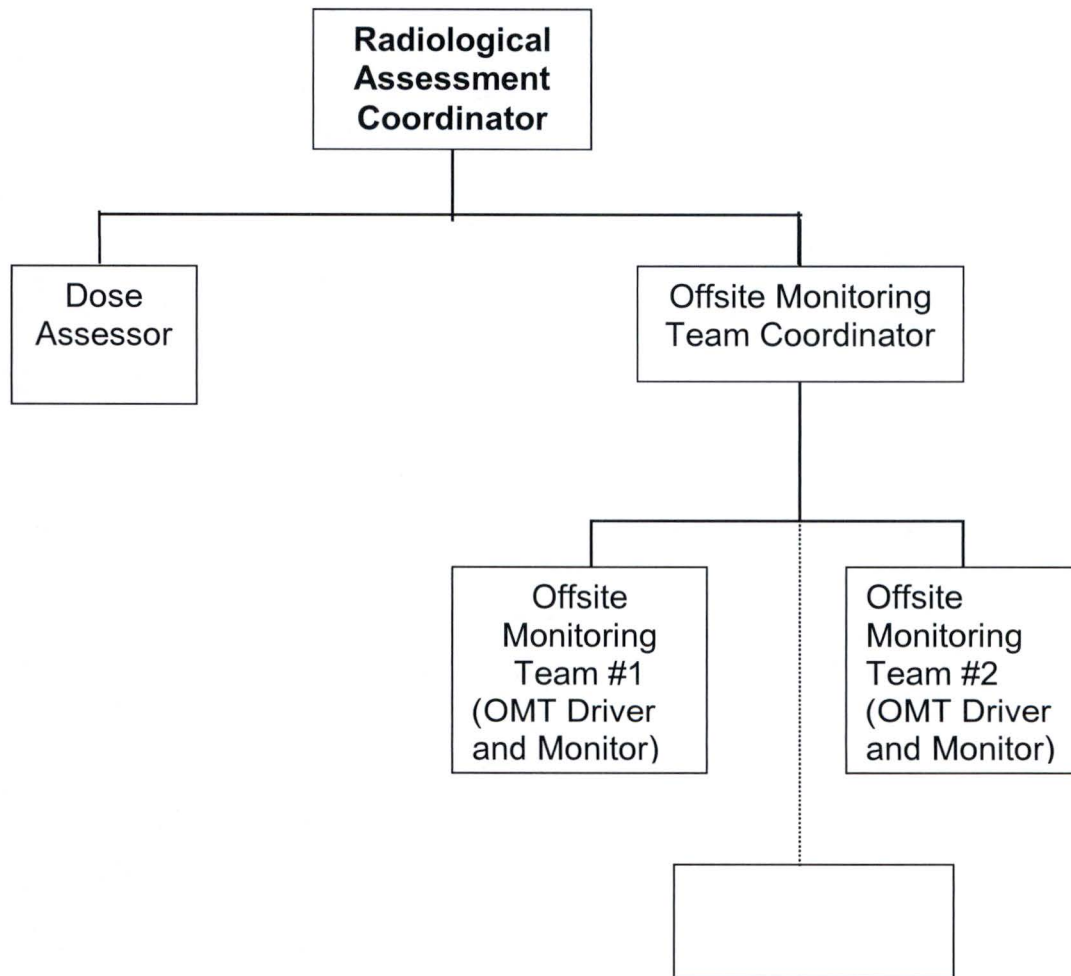
## PNPS EMERGENCY PLAN

Figure B-1e: Emergency Security Organization



# PNPS EMERGENCY PLAN

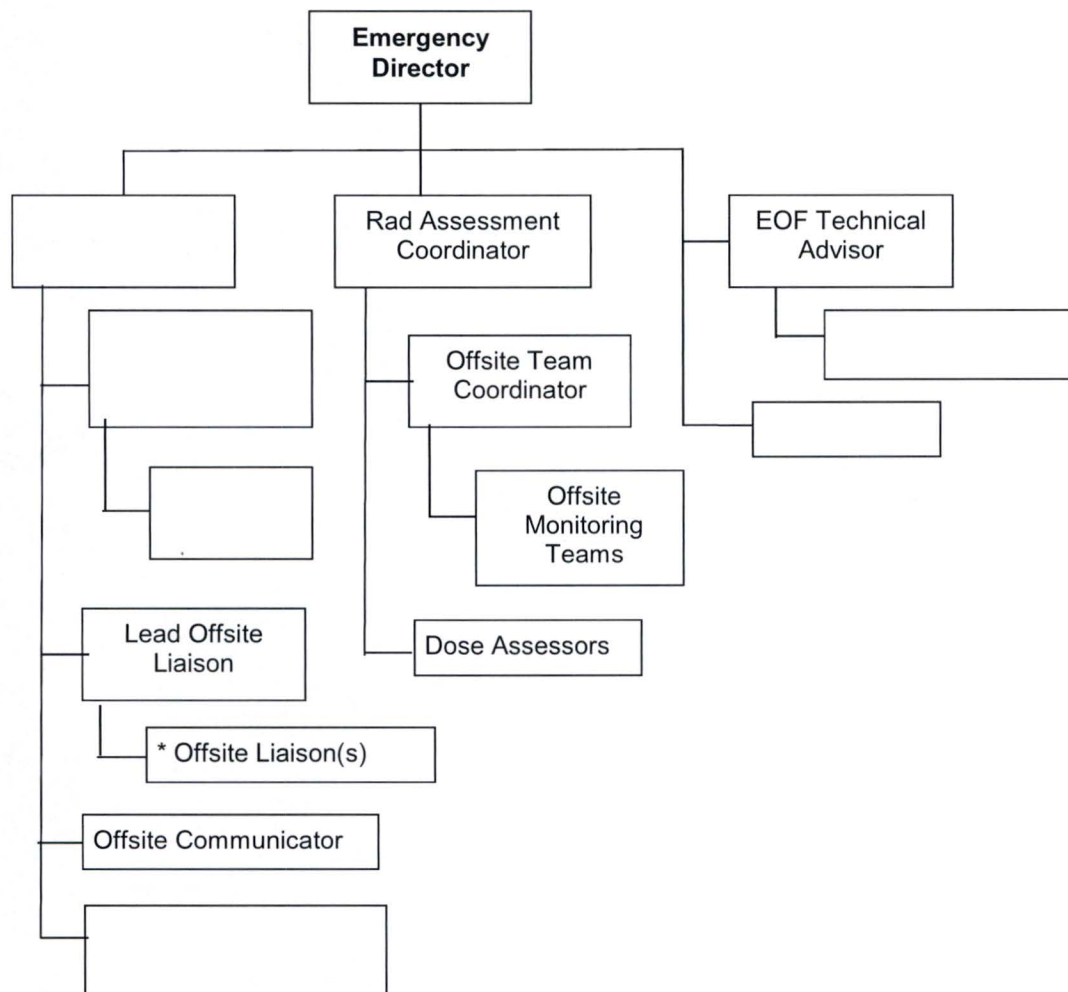
Figure B-1f: Offsite Radiological Assessment Organization



\* ~~Rad Data Communicator only if SPDS is inoperable~~

# PNPS EMERGENCY PLAN

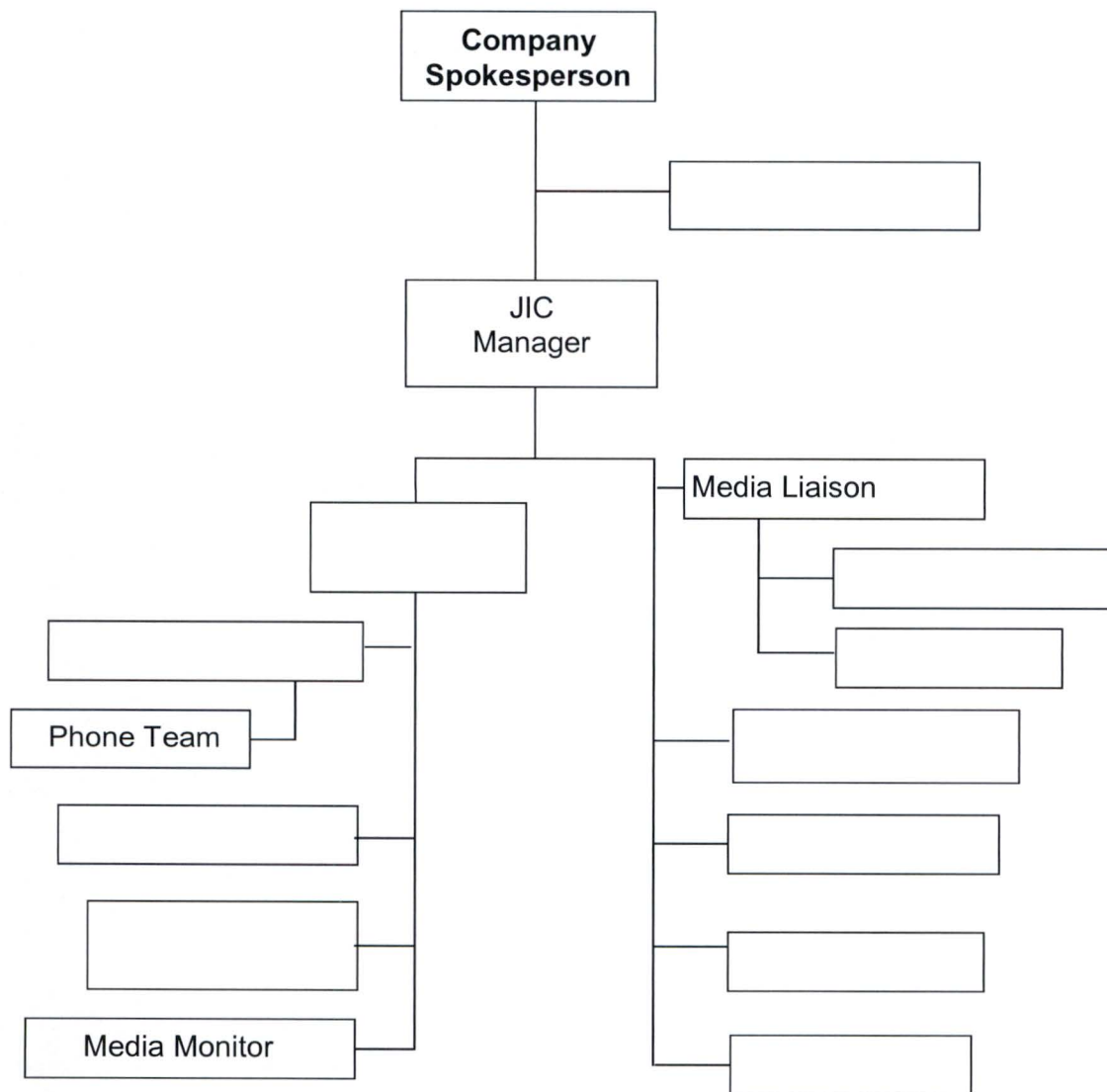
Figure B-1g: Emergency Operations Facility Organization



- Located at Commonwealth and ~~Local~~ Plymouth EOCs

## PNPS EMERGENCY PLAN

Figure B-1h: Emergency Public Information 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 National Response Framework (NRF). 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 the NRF, 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~~Plymouth EOCs to act as communications liaisons and to provide clarification of emergency response information.
- c. Upon activation of the EOF, the Lead Offsite Liaison is responsible for establishing and maintaining communications with offsite representatives in the Duxbury, Carver, Kingston and Marshfield EOCs.



## PNPS EMERGENCY PLAN

3. Radiological Laboratories: If the offsite radiological monitoring and environmental sampling operation exceeds the capacity of the PNPS capabilities, the radiological analytical capability of other non-affected Entergy nuclear sites, Commonwealth and Federal agencies and other utilities can be used to analyze radiological samples. As discussed in Section A.1, this additional capability is integrated into existing support efforts and concept of operations in responding to a declared emergency at PNPS. Section H.6 also provides more details on the offsite radiological monitoring support that can be used at PNPS.
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 Operations (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 sites 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 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. However, during a safeguards contingency event, actions may be taken that depart from the immediate requirements specified for each of the four classification levels when those actions are immediately needed to protect the health and safety of members of the public or the plant staff. Those actions may include suspension, delay or modification of activities that could endanger the safety of members of the public, plant staff or security force or which could interfere with an effective response to the safeguards contingency event. 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 the example conditions of 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. PNPS maintains the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and promptly declares the emergency condition as soon as possible following identification of the appropriate emergency classification level. The four classification levels are:
  - a. **Unusual Event** - Event(s) are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

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 of the PNPS Emergency Response Organization to standby (portions of the organization may be activated at this classification).



## PNPS EMERGENCY PLAN

- Notification of the Nuclear Regulatory Commission (NRC) immediately after notification of the appropriate Commonwealth and Local Agencies and not later than an hour after classification.
  - 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 transmission of an Initial Notification Form indicating that the event has been terminated.
- b. Alert – Event(s) are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or probable damage to site equipment because of Hostile Action. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels. 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), Joint Information Center (JIC), and notification of Entergy Corporate.
- Notification of the NRC immediately after notification of the appropriate Commonwealth and Local Agencies and not later than an hour after classification.
- 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, Commonwealth, State, and Local) within 8 hours.



## PNPS EMERGENCY PLAN

- c. Site Area Emergency - Event(s) are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or Hostile Action that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond 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.
  - Activation of the PNPS Emergency Response Organization which includes activation of the TSC, OSC, EOF, Joint Information Center and Corporate Emergency Response Group. Offsite Monitoring Teams are sent to staging areas or dispatched to monitor for releases of radiation to the environment.
  - Notification of the NRC immediately after notification of the appropriate Commonwealth and Local Agencies and not later than an hour after classification.
  - 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, Commonwealth, State and Local) within 8 hours.
- d. General Emergency - Event(s) are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or Hostile Action that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline 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.

## PNPS EMERGENCY PLAN

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, Joint Information Center and Corporate Emergency Response Group. Offsite Monitoring Teams are sent to staging areas or dispatched to monitor for releases of radiation to the environment.
  - Notification of the NRC immediately after notification of the appropriate Commonwealth and local agencies and not later than an hour after classification. 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.
  - Issuance, as a minimum, based upon plant conditions, initial protective action recommendations to affected EPZ sub-areas. Section J.7 provides a detail description of the possible recommendations that may be issued at the General Emergency classification including the consideration of administering potassium iodide (KI) to the general public.
  - Consideration of relocating the Joint Information Center to its alternate site, based upon radiological or other conditions, such as a Commonwealth-directed evacuation of subarea 7.
  - 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, Commonwealth, State and local) within 8 hours.
2. Emergency Action Levels: The symptoms and events outlined in Table D-1 encompass the example conditions based on Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels", Revision 5, February 2008. 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.



## HOT CONDITIONS

Revision 48TBD



**Table D-1** Symptoms and Events Requiring Emergency Classification

[illegible]

# 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 Emergency Management Agency (MEMA), notified by a dedicated notification network, or alternatively with BECONS or commercial telephone as backups. The Massachusetts Emergency Management Agency (MEMA) notifies the Massachusetts Department of Public Health (MDPH), MEMA Region II and Braintree using commercial telephone lines.
  - The local communities within the Plume Exposure EPZ and reception communities are notified by a dedicated notification network, 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, the PNPS Emergency Response Organization is 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 the Emergency Response Organization and related facilities is required. If the nature of the event threatens the safety of the ERO, onsite personnel may be directed to the Alternative Facility at the Chiltonville Training Center or requested to remain in place until the security of the site is restored.

Announcements are made from the Control Room over the plant public address system to notify on-site personnel of plant-related emergency response information. In addition to the public address system, emergency organization personnel are notified by pagers or telephone calls using the EverBridge notification system. Backup systems to EverBridge include the use of the EverBridge alternate activation process or initiating telephone call-outs of emergency response personnel.

Non-emergency station response is discussed under Station Procedure 1.3.12.1, "Non-Emergency Notification of Management".



## PNPS EMERGENCY PLAN

3. Initial Notification: The initial emergency message form includes information about:

- Notification Type, i.e. "This is a Drill" or "This is an Actual Event."
- Identity of caller and receiver of call
- 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 initial notification will also include protective action recommendations to the affected EPZ sub-areas. Section J.7 provides a detail description of the possible recommendations that may be issued at the General Emergency classification.

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.

## PNPS EMERGENCY PLAN

- m. Request for any needed onsite support by offsite organizations.
  - n. Prognosis for worsening or termination of event based on plant information.
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 Massachusetts Emergency Management Agency and 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 thirteen (113) large scale electronic sirens and five (5) 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.

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. EAS messages are supplemented by news advisories prepared by the Massachusetts Emergency Management Agency.

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 receives notification from the Harbor Master and U. S. Coast Guard boats equipped with public address systems. Additional notification is also completed by marine and Citizens Band (CB) radios to those boats that are radio equipped.

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

## PNPS EMERGENCY PLAN

7. Messages to the Public: The Commonwealth has developed draft EAS and News Advisory messages that are intended for the public. These draft messages are included as part of the Commonwealth's plan and procedures 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 Commonwealth of Massachusetts maintains a stockpile of KI to be made available to emergency workers, institutionalized persons who cannot be evacuated, and the general public. The MDPH and MEMA provide information about the use of KI and how and where to obtain it. PNPS also provides supporting information for messages through the MEMA.



# PNPS EMERGENCY PLAN

## **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 ensuring 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 site radiological monitoring teams. Table F-2 shows available communications equipment within each of the PNPS emergency response facilities.

PNPS utilizes the EverBridge notification system to rapidly notify members of the PNPS Emergency Response Organization. EverBridge is a computer system (both hardware and software) that notifies the ERO of an emergency via a number of modalities (i.e., telephone, pager, text, email). This system provides a primary notification through the computerized system with alternate activation capability. The decision process used to activate EverBridge is specified in appropriate Emergency Plan Implementing Procedures.

If the EverBridge computerized system should fail, Emergency Preparedness Implementing Procedures specify the course of action to be taken. These procedures require using the alternate EverBridge activation, if available, or initiating individual telephone call-outs of emergency response personnel.

## PNPS EMERGENCY PLAN

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 NRC notification. In addition to the ENS, administratively dedicated telephones serving as the Health Physics Network (HPN) are used in the TSC and EOF for the transmittal of radiological information to the NRC. It is under the National Response Framework (NRF) that PNPS requests assistance from Federal agencies.

Additional arrangements have been made to allow for the establishment of NRC communications equipment at the EOF.

- 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.
  - Nuclear Incident Advisory Team (NIAT) Radio: This radio system is used by the Commonwealth to direct radiological teams from the EOF.
  - PNPS Offsite Monitoring Team Radio: This repeater radio frequency is used 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 back up 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 uninterruptible power supply (UPS) and generator backup power.
  - Local Commercial Telephone System: This system provides standard commercial telephone service through the Verizon infrastructure, consisting of central offices and the wire line and microwave carrier.
  - Cellular Telephones: A cellular telephone is provided in the ~~Shift Manager~~CRS's office in the Control Room, TSC, OSC, CAS and SAS as a backup to the local commercial telephone system.
  - Satellite Telephones: A satellite telephone is provided in the ~~Shift Manager~~CRS's office in the Control Room and EOF as a backup to the local commercial telephone system.



## PNPS EMERGENCY PLAN

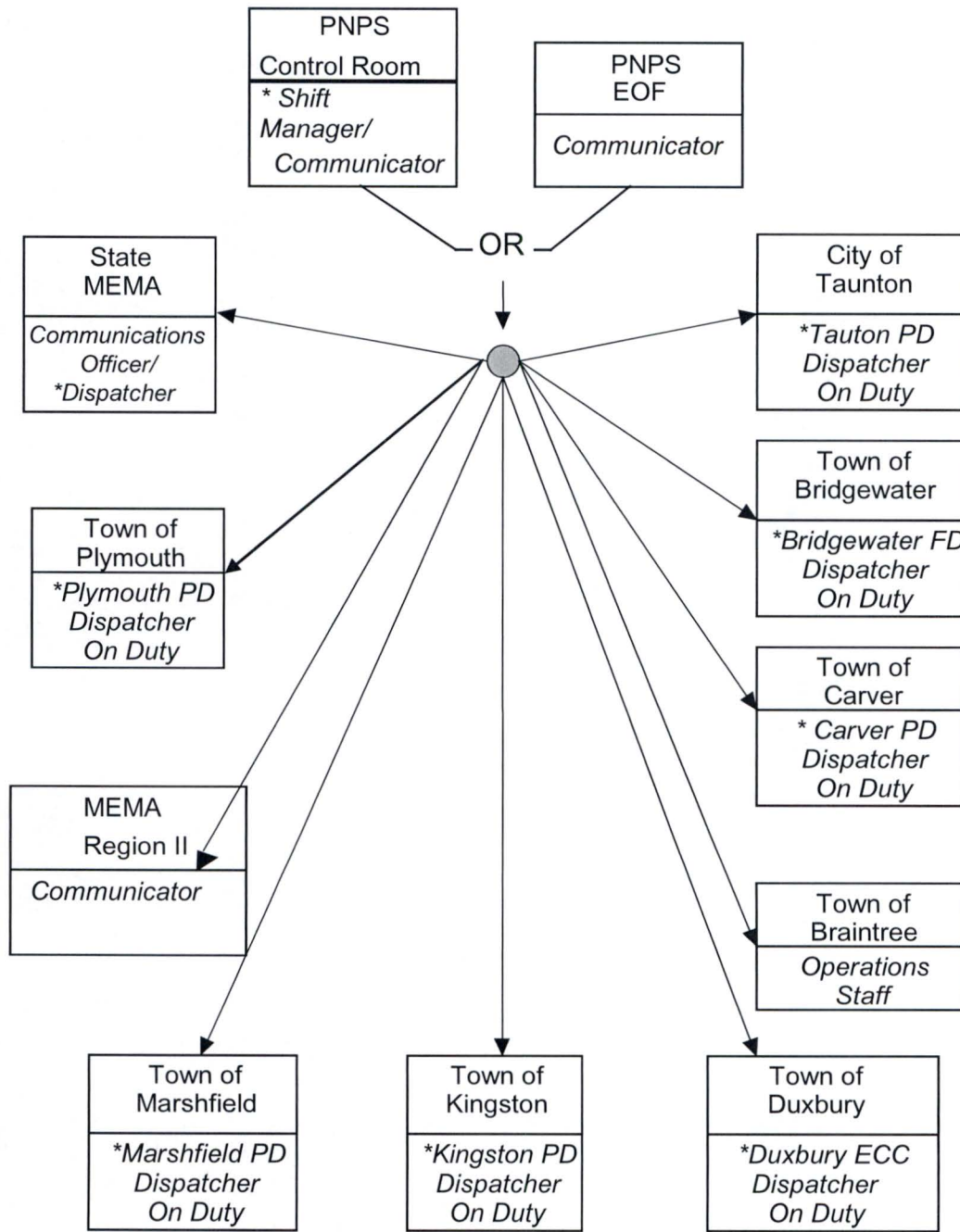
- c. Special Communication Links: Separate communications methods exist among the various emergency response facilities in order to ensure reliable and timely exchange of information. These methods consist of the following:
- Dedicated Notification Network (DNN): The DNN is a dedicated notification network that provides a notification link from PNPS (Control Room, TSC and EOF) to each offsite agency. (CR-PNP-2014-323, CA-02) The DNN is the primary notification method from PNPS to offsite authorities. Figure F-4 depicts the initial notification scheme. BECONS and commercial telephones are the backup for 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 - Joint Information Center: Designated telephone circuits between the EOF and the Joint Information 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 Joint Information Center.
  - Mitigation Line: An administratively dedicated telephone that provides conferencing capability among the Control Room, TSC, EOF and alternate EOF for use by Operations and Engineering personnel.
  - 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.
  - Rad Data Phone: An administratively dedicated telephone that provides conferencing capability among the Control Room, TSC, EOF and alternate EOF. The Rad Data Phone is used to transmit radiological information between the 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 and technical personnel located in each of the facilities.
  - EverBridge: The primary PNPS ERO notification system utilizing various modalities including telephone, pager, email, SMS text messaging as well as an alternate activation capability using commercial telephone.
  - 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.

## PNPS EMERGENCY PLAN

- 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.
  - 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, Beth Israel Deaconess Hospital - Plymouth, 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 Commonwealth, 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. PNPS F&E Staff maintain 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 (Dedicated Notification Network)
2. BECONS
3. Commercial Telephone



## PNPS EMERGENCY PLAN

Table F-1: Communications Matrix

	Control Room	TSC	OSC	EOF	AEOF	JIC	Corporate	Primary Access Pt.
Control Room								
TSC	2,6,7,9,10,15,16,19,24,25,28							
OSC	1,2,4,6,7,9,25,28	9,28						
EOF	1,2,4,5,6,7,9,10,15,16,19,24,27	1,2,4,5,7,9,10,15,16,19,24,27	7,9,10					
AEOF	1,5,7,10,15,16,19,24	4,7,10,15,16,24	7,9,10	1,4,5,10,15,16,20,24				
JIC	10,19	10,19	10	10,14,19	10			
Corporate	10,19	10,19	10	10,19	10	10		
Primary Access Point	1,2,6,9,10	1,2,6,9	2,9,10	1,2,9,10	1,10	10	10	
EPZ Towns	5,10,12,13,19,27	5,10	10	5,10,19,20,27	5,10,19	10,19	10	10,12,13
Reception Center Towns	5,10,19,27	5,10	10	5,10,19,20,27	5,10,19	10,19	10	10
MEMA	5,10,19,27	5,10	10	5,10,19,20,26,27	5,10,19	10,19	10	10
Rhode Island	10	10	10	10,19	10,19	10,19	10	10
NRC	9,10, 18,19,23	9,10,17,18,23	10,23	10,17,18,19,23	10,19	10,19	10	10
Beth Israel Deaconess Hosp	10	10	10	10	10	10	10	10
OMT	4,28	4,28	4,28	4,26,28	4,28			28
State Police	1,10,11,19	1,10,19	10	1,10,11,19	1,10	10,19	10	1,10,11

	EPZ Towns	Reception Center Towns	MEMA	Rhode Island	NRC	Beth Israel Deac.Hosp.	OMT
Control Room							
TSC							
OSC							
EOF							
AEOF							
JIC							
Corporate							
Primary Access Point							
EPZ Towns	5,10,20						
Reception Center Towns	5,10,20	5,10,20					
MEMA	5,10,19,20	5,10,19,20					
Rhode Island	10	10	10				
NRC	10	10	10	10			
Beth Israel Deaconess Hosp	10,21	10,21	10,21	10	10		
OMT						28	4,28
1. Pilgrim Alert Radio	7. Rad Data Phone	13. Ringdown-Plymouth Fire		19. Facsimile Equipment		25. Alt. Shutdown Comm Radio	
2. Security Radio	8. Reserved	14. EOF- Joint Information Center		20. RACES Radio (2 Meter)		26. NIAT Radio	
3. (Spare)	9. PNPS Telephone System	15. Plant Data Phone		21. Medical Radio		27. DNN	
4. OMT Radio	10. Local Telephone System	16. Emergency Conference Line		22. (Spare)		28. Cellular Telephone	
5. BECONS	11. Ringdown-State Police	17. Health Physics Network		23. Fed Telecom System (FTS)			
6. Fire Brigade Radio	12. Ringdown-Plymouth Police	18. Emergency Notification System		24. Mitigation Line			

# PNPS EMERGENCY PLAN

Table F-2: Communications Equipment

		CONTROL RM	TSC/OSC	EOF	AEOF	PAP	JIC	CAS	SAS
RADIOS	Pilgrim Alert Radio	<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"/>
	PNPS Security Radio	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	NIAT Radio			<input checked="" type="checkbox"/>					
	PNPS Offsite 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"/>	<input checked="" type="checkbox"/>				
	RACES Radio (2 Meter)			<input checked="" type="checkbox"/>					
	Plymouth Fire Radio							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Plymouth Police Radio							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TELEPHONES	Dedicated Notification Network (DNN)	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
	PNPS Telephone 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"/>
	Fixed Cellular Telephone System	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Local Commercial Telephone 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"/>		
	Ringdown Plymouth Police Department	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Ringdown Plymouth Fire Department	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Ringdown State Police	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Satellite Telephone	<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"/>				
	Plant Data Phone (PDP)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
	Rad Data Phone	<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"/>				
	Emergency Notification System (ENS)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
	Health Physics Network (HPN)		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
OTHER	Onsite Gaitronics 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"/>		

## PNPS EMERGENCY PLAN

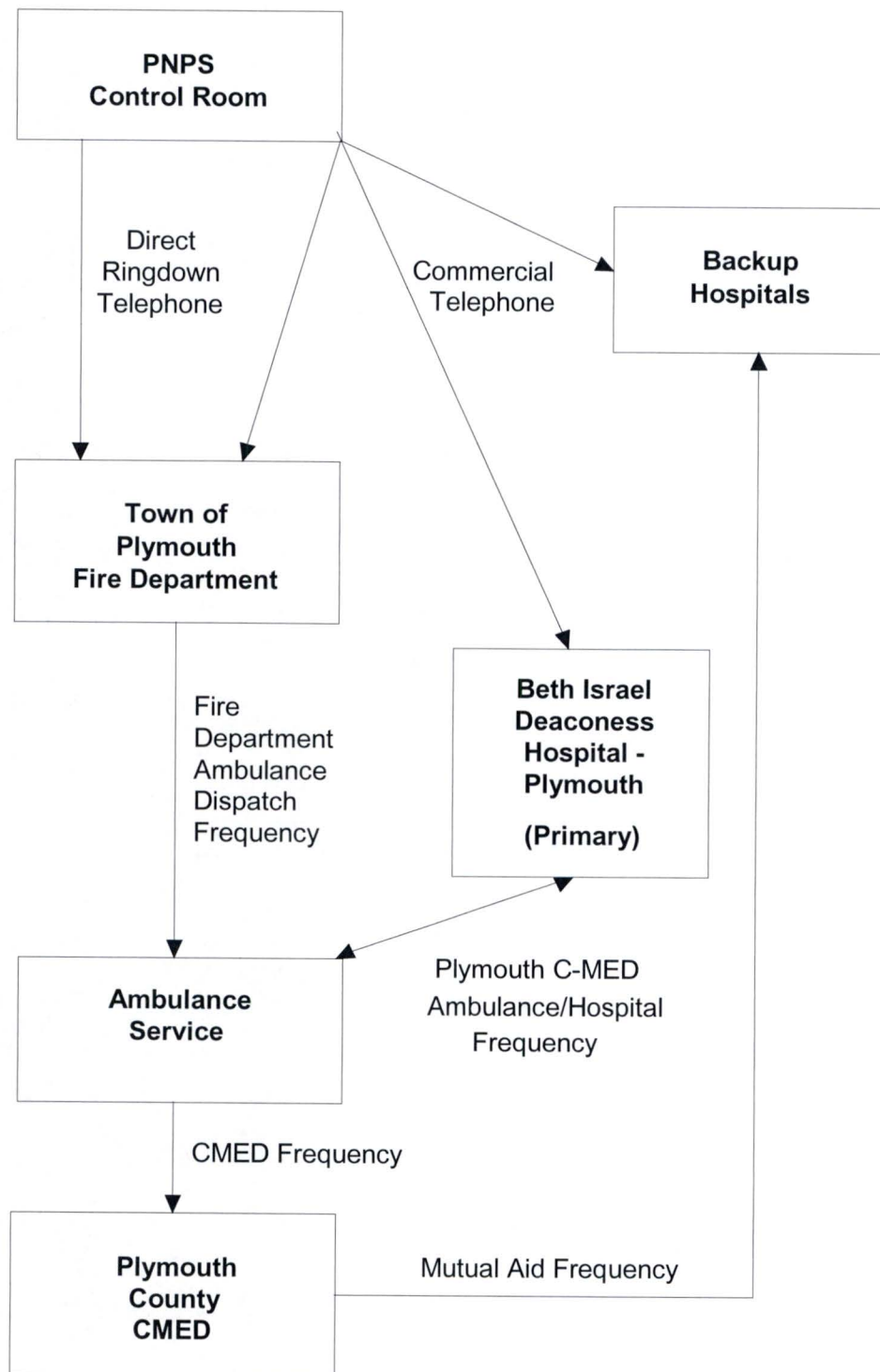
FIGURE F-2: DELETED

### NOTE

The decision process to activate EverBridge is specified in appropriate Emergency Plan Implementing Procedures

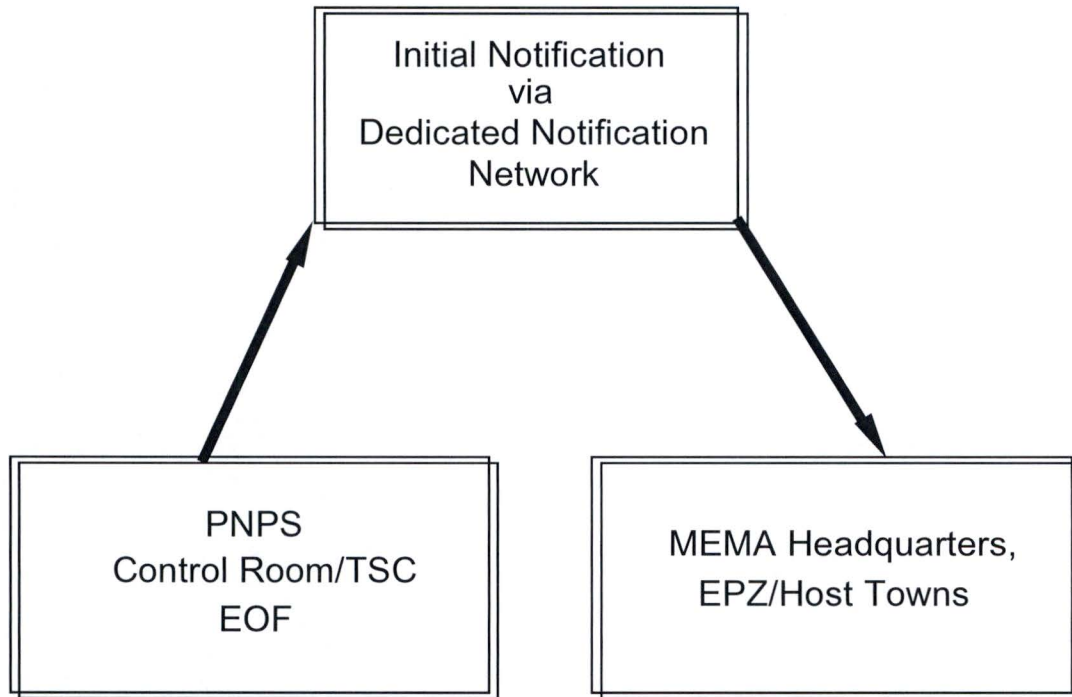
## PNPS EMERGENCY PLAN

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. Joint Information Center
  - a. The Joint Information 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 available for their use. If, due to radiological or other conditions, the Joint Information Center is found to be uninhabitable, it will be relocated to the Alternate Joint Information Center at Bridgewater State University in Bridgewater. Comparable facilities for both the Joint Information Center staff and media representatives are available at the alternate facility.
  - b. During an emergency, the Emergency Director may approve access to the Emergency Operations Facility for a limited number of news media.
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).

## PNPS EMERGENCY PLAN

- b. The Joint Information 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 Information Coordinator and Inquiry Response Coordinator located at the Joint Information Center. They respond to media calls and broadcasts and r~~Reports of misinformation or rumors are forwarded to the ~~Inquiry Response Coordinator and Information Coordinator, and then forwarded to the~~ JIC Manager and/or Company Spokesperson for an appropriate response by Joint Information 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 Joint Information Center or other emergency response facilities. Reporters receive information about Joint Information 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 ensure 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 ~~Shift Manager~~CRS. 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~~Certified Fuel Handlers and ~~Senior Licensed Nuclear Plant Operators~~Non-Certified Operators. All plant-related operations are directed from the Control Room and supervised by the ~~Shift Manager~~CRS. 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.

Additional engineering support may be activated from the Nuclear Engineering Staff. Specific personnel assignments are determined at the time of the emergency by the ~~TSC~~ Emergency Plant Manager and the Operations 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 may include search and rescue, repair and corrective actions, damage assessment/control, onsite/in-plant survey, first aid, and fire fighting to support accident mitigation activities.

The Chiltonville Training Center is an alternative facility, with communication capabilities for contacting the Control Room, plant security and the EOF, which serves as a staging area for augmented emergency response staff if the site is under threat of or experiencing hostile actions.

In the event the TSC/OSC evacuation becomes necessary, the emergency response procedures identify an alternate location for the TSC/OSC.

2. Emergency Operations Facility (EOF): PNPS has established an Emergency Operations Facility (EOF) located at 44 Obery Street across from the Plymouth North High School 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 may be requested to augment access control of the EOF.

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; coordination of corporate support; development of protective action recommendations for the general public; coordination of emergency response activities with Federal, Commonwealth and local agencies; and capability to perform offsite notifications.

The EOF consists of an Operations Room, a Communications 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 in the Town Hall, Carver, MA. and is approximately 10.5 miles west 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. Alternative Facility: The Alternative Facility utilized during a Hostile Action event is located at the Chiltonville Training Center. The facility serves as a staging area for TSC and OSC personnel and is equipped with offsite and onsite communication and engineering assessment activities including damage control team planning and preparation.



## PNPS EMERGENCY PLAN

4. Emergency Operations Centers (EOCs) and Incident Command Post (ICP): 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.

The Town of Plymouth EOC is located in Plymouth, Massachusetts. 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 Region 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 teletypewriter) equipment, maps, emergency plans, and status boards to provide the necessary interfaces with other Commonwealth, local, Federal and PNPS emergency facilities.

The Joint Information Center is located at the Entergy Industrial Park Training Center in Plymouth, approximately 6.5 miles North West of PNPS. The Joint Information Center is staffed by PNPS and government public information representatives who will be the source of public information during an emergency at PNPS. The Joint Information Center is normally activated upon declaration of an Alert or above. If, due to radiological or other conditions, the Joint Information Center is found to be uninhabitable, it will be relocated to the Alternate Joint Information Center at Bridgewater State University in Bridgewater.

The MEMA Region II EOC is located at MEMA Region 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 EOC/Office of Public Safety (OPS) is the primary Commonwealth notification point. Continuous communication coverage is provided by dispatcher on a 24-hour basis.

The Incident Command Post (ICP) is an offsite physical location that administers the on-scene incident command and the other major incident management functions and works under Incident Command System (ICS) strategies. ICS has been summarized as a "first-on-scene" structure, where the first responder of a scene has charge of the scene until the incident has been declared resolved, a superior-ranking responder arrives on scene and seizes command, or the Incident Commander appoints another individual Incident Commander. ICS consists of a standard management hierarchy and procedures for managing temporary incident(s) of any size. Incidents at Pilgrim Station will have an ICP location as determined by the responding offsite Incident Commander.



## PNPS EMERGENCY PLAN

5. Activation: PNPS has put into place plans and procedures to ~~insure-ensure~~ 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 some minimum staffing and one (1) hour for full manning has been established for onsite emergency facilities and the EOF. Plans have been developed to ~~insure-ensure~~ timely functional activation and staffing of the Joint Information Center.
6. 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:
  - 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.

~~The Containment High Radiation Monitoring System will be used to monitor the integrity of the reactor fuel and to assess core damage conditions during the emergency phase of an accident. Contingency chemistry sampling procedures are available as a supplemental means to confirm the integrity of the reactor fuel or core damage in support of post-accident and long-term recovery operations. The contingency chemistry procedures provide the appropriate instructions to obtain and analyze highly radioactive samples from the reactor coolant system and containment (i.e., drywell and torus).~~
  - 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.

Section I provides more details on the accident assessment efforts that can be used to assess the incident and make determinations on the proper emergency measures to be implemented.

## PNPS EMERGENCY PLAN

7. 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 Taunton, MA for meteorological data, and local marine forecast data and Coast Guard facilities provide hydrological data, and Weston Observatory provides seismic activity.
- 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 environmental Thermoluminescent Dosimeters (TLDs) (WT-WTPNP-2013-263, CA-05), 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, PNPS has access to outside analytical assistance and laboratory facilities from other non-affected Entergy nuclear sites, Commonwealth and Federal agencies and other utilities through INPO. This support may include but is not limited to the following:

Massachusetts Department of Public Health (MDPH) through the implementation of the Nuclear Incident Advisory Team (NIAT) Handbook has laboratory analysis capability at the Commonwealth/State Contracted laboratories and those laboratories listed in the New England Interstate Radiation Assistance Plan.

The U.S. Department of Energy (DOE) through the implementation of the Federal Radiological Emergency Response Plan (FRERP) or Radiological Assistance Program (RAP) will provide necessary radiological monitoring assistance. The DOE Region Coordinating Office for PNPS is the Brookhaven Area Office located in Upton, New York.

Other environmental monitoring and analysis support can be requested and arranged through INPO. The INPO Emergency Resources Manual includes the information necessary to locate and request specialized equipment and technical assistance in the area of offsite radiological monitoring. INPO member utilities and suppliers agree to provide assistance as outlined in the INPO Emergency Resources Manual.

The above facilities have the capability to perform laboratory analyses of various environmental samples (e.g., terrestrial, marine and air). It is also estimated that the analytical assistance and laboratory support will be able to respond within eight (8) hours from initial notification.



## PNPS EMERGENCY PLAN

8. 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 Advisory 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  $1.0\text{E-}7 \mu\text{Ci/cc}$  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.

9. 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, to the Emergency Plant Information Computer (220 foot) and to the station's business Local Area Network (160 foot). The 220 foot also reports information to the Control Room.

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.

10. Protective and Damage Control 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  $1.0\text{E-}07 \mu\text{Ci/cc}$ .

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, OSC, JIC and EOF personnel, and is also stored at the Chiltonville staging area.

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.



## PNPS EMERGENCY PLAN

Portable first-aid kits are available in the Engineering and Support Building 1st Floor entrance closest to Primary Access Point in the Medical Cart, Medical Office in the vestibule Central Alarm Station Building, and Old Executive Building within the Fire Tour personnel 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.

11. 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 PNPS Procedures, are submitted to the Emergency Planning Manager for review. The Emergency Planning Manager is responsible for the evaluation of these results and assignment of corrective actions for deficiencies identified, if any.

The Emergency Planning Manager 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 Table H-5 system inoperability, the Emergency Planning Manager will inform the Regulatory and Performance Improvement Director within one business day of the inoperable condition, as well as of compensatory measures taken, if any.

12. General Use Emergency Equipment: Tables H-1, H-2, H-3, and H-4 identify by general category examples of equipment that 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~~ ensure that sufficient and appropriate emergency kits are made available.

13. 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~~ ensure the readiness of field monitoring equipment. Instrumentation and equipment utilized for activity determination are routinely calibrated to ~~insure~~ ensure timely availability.

## PNPS EMERGENCY PLAN

Table H-1: Examples of 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	Portable Radio
Masking Tape	Clipboard
Petri Dishes	SAM-2 Counting System
Portable Generator	
Pocket Knife	



## PNPS EMERGENCY PLAN

Table H-2: Examples of 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: Examples of Medical Equipment

Bandage Shears	Burn Spray
Forceps	Antiseptic Spray
Adhesive Strips	Sterile Burn Sheet
2" Gauze Pads	Multi-Trauma Dressing
Knuckle Bandages	First Aid Triage Pack:
Fingertip Bandages	Major Wound Care:
Antiseptic Wipes	Fracture Care
Triple Antibiotic Ointment Packets	Severe Burns
First Aid/Burn Cream packets	Minor Burns
Rescue Blanket	CPR & Shock
Combine Dressing	Eye Care
First aid tape	Instant Cold Pack
Eye wash	Exam Gloves

## PNPS EMERGENCY PLAN

Table H-4: Examples of 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 Emergency Preparedness Notification

Technical Support Center Diesel Generator

Technical Support Center HVAC System

Pilgrim Station Gaitronics System

Pilgrim Plant 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

- ~~Contingency Chemistry Procedures – The Commission has approved and issued License Amendment 204 to PNPS that eliminates the requirement to have and maintain the Post Accident Sampling System (PASS) to support emergency response decisions during the initial phase of an accident (USNRC Letter Number 1.03.128, dated November 14, 2003). However, there is a significant benefit to having information from radioisotope sampling as a supplemental means to address decisions in support of long-term recovery operations under a severe accident condition. Therefore, contingency chemistry procedures are available to obtain and analyze highly radioactive samples from the reactor coolant system and containment (i.e., drywell and torus) when deemed appropriate or necessary to support decisions during long-term recovery operations. The sample results will be used to confirm the integrity of the reactor fuel or core damage conditions with other plant indicators such as Area Radiation and Process Radiation Monitors.~~
- 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 Unified RASCAL Interface (URI) computer program which displays the projected whole body and thyroid exposures to the populace in the plume exposure pathway.



# PNPS EMERGENCY PLAN

- ~~• Containment High Radiation Monitoring System—A primary method to estimate core damage is based on radiation monitor readings from the Containment High-Radiation Monitoring System (CHRMS), which monitors the radiation levels inside the primary containment (Drywell and Torus areas). This is accomplished by comparing the radiation monitoring readings inside the primary containment with established Drywell and Torus CHRMS curves. The curves provide an estimate of the amount of core damage by plotting the detector dose rate response versus time after shutdown corresponding to various assumed source term scenarios. The assumed source term scenarios include full core melt, gap activity and spiked primary coolant releases.~~

## 3. Release Source Term Determination

- The potential for release of radioactive material and the magnitude of the release can be assessed through use of the ~~Containment High Radiation Monitoring System (CHRMS) and Process Radiation Monitors. The Containment High Radiation Monitoring System readings can be used to estimate the percentage of core damage and establish the total number of curies available for release.~~
- 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 Unified RASCAL Interface (URI) computer program.

- Effluent Monitor Data and URI: The correlation between effluent monitor data and onsite and offsite exposure rates is accomplished through use of the Unified RASCAL Interface (URI) computer program. URI is a computer program 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 10-mile Plume and 50-mile Ingestion exposure pathways.
- 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 site, 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 the station's business Local Area Network. Data from both towers is also available via local readout. The National Weather Service, or other official commercial or governmental meteorological gathering services, are possible alternate sources for obtaining meteorological data.

## PNPS EMERGENCY PLAN

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.
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 Radiological Assessment Coordinator. Environmental measurements are utilized as an aid in the determination of protective and recovery actions for the general public.
8. Offsite Monitoring Teams (OMTs): Offsite Monitoring Teams 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. OMTs are composed of two individuals, at least one of whom is a qualified Radiation Protection technician.

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

Survey data from OMTs 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: OMTs 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  $1.0\text{E-}7$   $\mu\text{curies}$  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 in coordination with federal and site 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 to protect onsite personnel during hostile action is provided to ensure the continued ability to safely shut down the reactor and perform the functions of the emergency plan. A combination of restricted movement, movement to safe locations and site evacuation may be used depending on the nature of the event and available advance warning. 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, by dispatching a security officer(s) to evacuate those areas.

2. Evacuation Locations: If Protected Area evacuation is required, personnel are directed to evacuate to an assembly area. The Engineering and 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.

## PNPS EMERGENCY PLAN

5. Accountability: At the declaration of Site Area Emergency or General 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 TSC Security Coordinator and the results forwarded to the Emergency Plant Manager. For Hostile Action events, accountability may be delayed in lieu of other onsite protective actions required to ensure safety of the site and its personnel. In these cases, accountability will be completed once safe conditions have been established.
6. Provisions for Onsite Personnel: PNPS maintains an inventory of respiratory protection equipment, anti-contamination clothing, and radio protective 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 radiation protection 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 for offsite PNPS emergency workers or by the Emergency Plant Manager for onsite PNPS emergency workers.



## PNPS EMERGENCY PLAN

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" and the NRC/FEMA guidance in Supplement 3 to NUREG-0654/FEMA-REP-1 – "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Guidance for Protective Action Strategies."

Protective action recommendations are made directly to the Commonwealth agencies that 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.

The possible Protective Action Recommendations (PARs) issued by PNPS in accordance with EP-IP-400, "*Protective Action Recommendations*", at a General Emergency include:

- ~~• For a Rapidly Progressing Severe Accident (RPSA), a General Emergency distinguished by a rapid loss of containment integrity and loss of ability to cool the core, a plant-based PAR to evacuate the 2 mile ring and 5 miles downwind of the affected EPZ subareas along with sheltering of all other EPZ subareas will be recommended. The 5-10 downwind area will be re-evaluated for evacuation by the EOF, or~~
- At a minimum, based on plant conditions, ~~(for a non-RPSA)~~, evacuation of the 2 mile ring and 5 miles downwind of the affected EPZ sub-areas along with sheltering of all other EPZ sub-areas will be recommended unless sheltering as an alternative to evacuation is recommended; or
- In event of a short duration emergency radioactive release (i.e., <1 hour for the entire event), or a General Emergency is declared because of Hostile Action, then sheltering instead of evacuation for the affected, land-based EPZ sub-areas will be recommended.

In addition to the plant-condition PARs, off-site dose projections will be used to determine whether plant-condition PARs are adequate. This will include evaluating the off-site dose projection results in accordance with the threshold for dose-based evacuation PARs. Table J-1 summarizes the PNPS PARs for the general public based on projected dose to the population-at-risk.

In all of the above cases, a reminder is provided that Commonwealth and local authorities should consider the administration of Potassium Iodide (KI) for the general public in accordance with their plans and procedures.



## 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 in the formulation of protective action recommendations using Guidance in NUREG-0654/FEMA-REP-1, Rev.1, Supplement 3, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants". Estimates of EPZ permanent resident population changes are conducted annually.
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.
  - b. The population distribution around Pilgrim Nuclear Power Station is presented in the Evacuation Time Estimates, Appendix 5.
  - c. As indicated in Section E, 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-c. 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-d. Provisions for the use of radio protective 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 radio protective drugs to emergency workers and the general public.
  - 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, Evacuation Time Estimates.

## 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, Evacuation Time Estimates.
  - 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, Evacuation Time Estimates. Estimates of EPZ permanent resident population changes are conducted annually.
  - m. The bases for dose driven protective action recommendations are as follows:
    - If projected doses exceed minimum EPA PAGs, evacuation is considered for affected subareas and sheltering is considered for remaining subareas.
    - 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, security concerns or offsite emergency response capabilities) is usually performed by the Commonwealth.
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:**

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

**THEN:**

No actions are necessary.

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

Evacuate \*

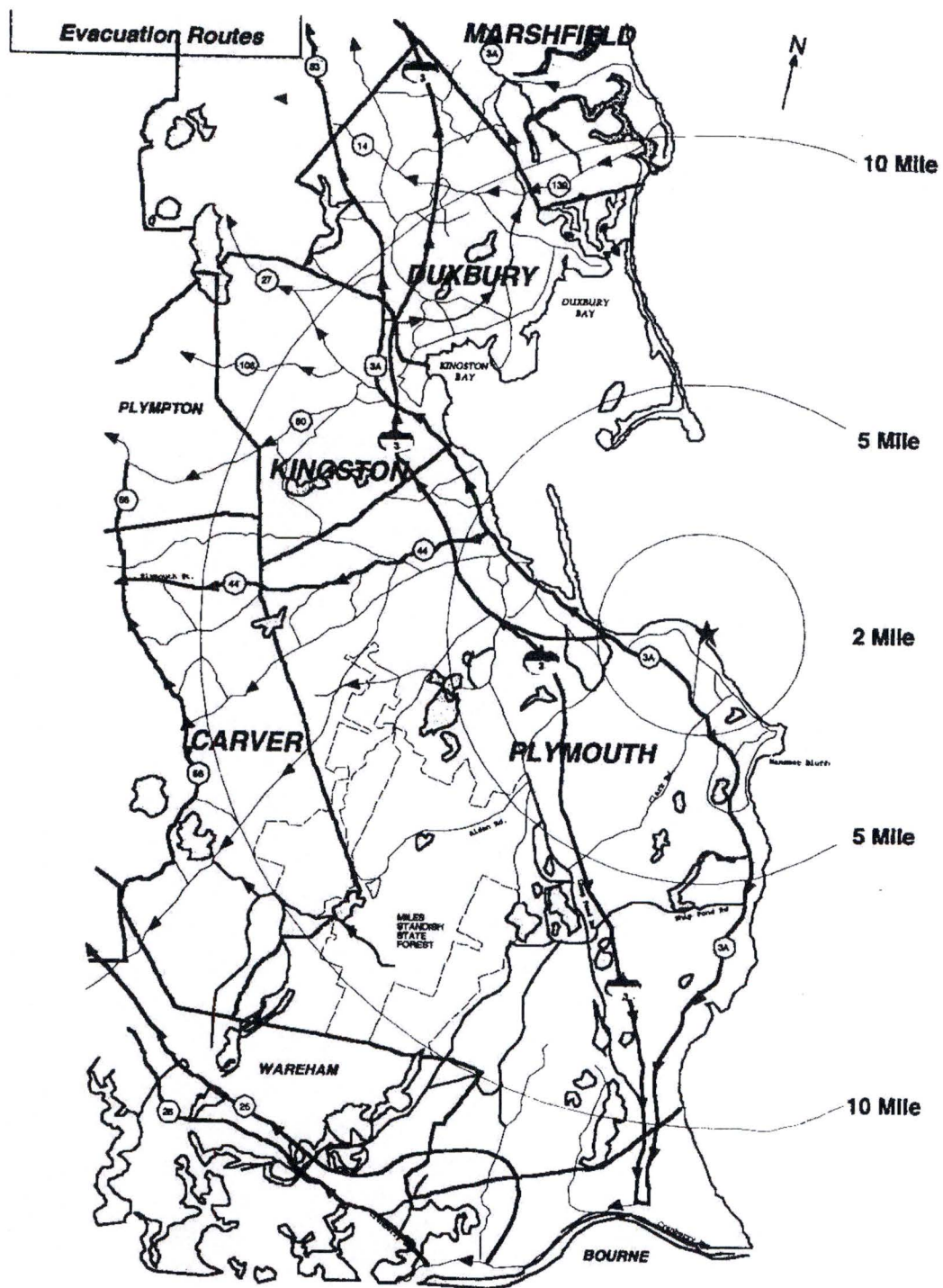
Consider the administration of Potassium Iodide (KI) to the general public †

- \* 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, non-security impediments or offsite emergency response capabilities) is usually performed by the Commonwealth.
- † Consideration of administering Potassium Iodide (KI) to the general public would be recommended by PNPS at the General Emergency classification in accordance with offsite plans and procedures.



# PNPS EMERGENCY PLAN

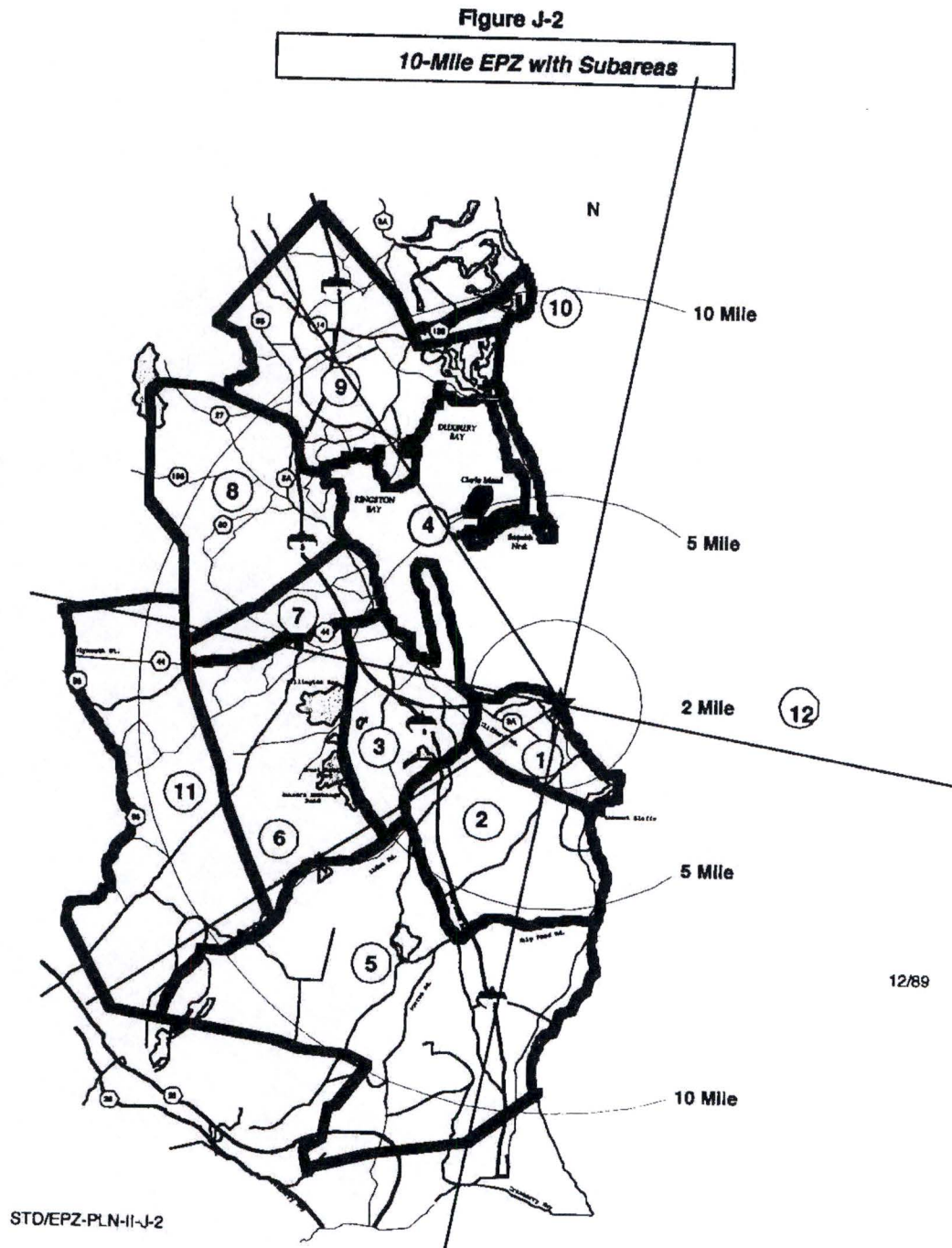
Figure J-1: Evacuation Routes





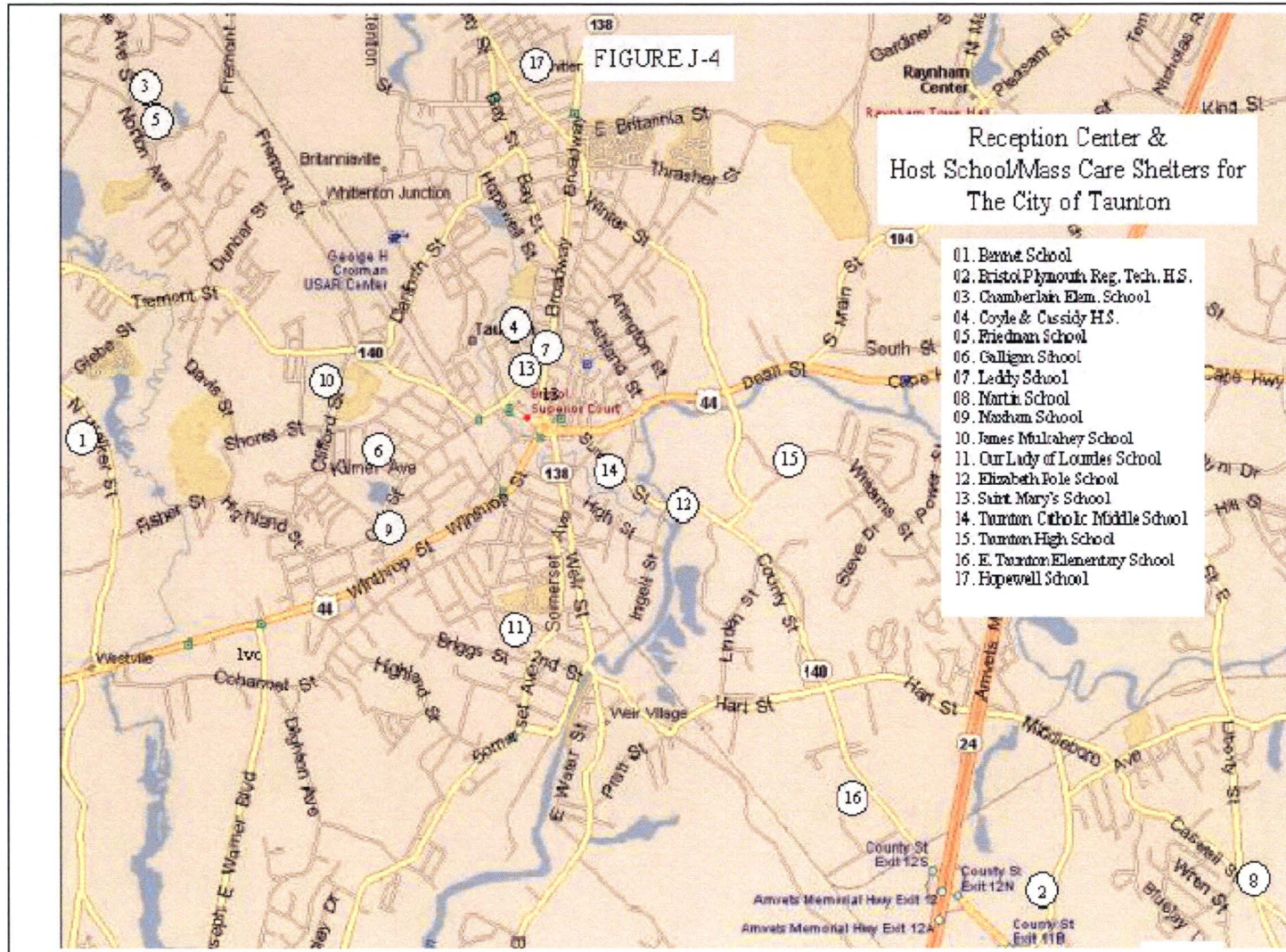
# PNPS EMERGENCY PLAN

Figure J-2: 10-Mile EPZ With Subareas



## PNPS EMERGENCY PLAN

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

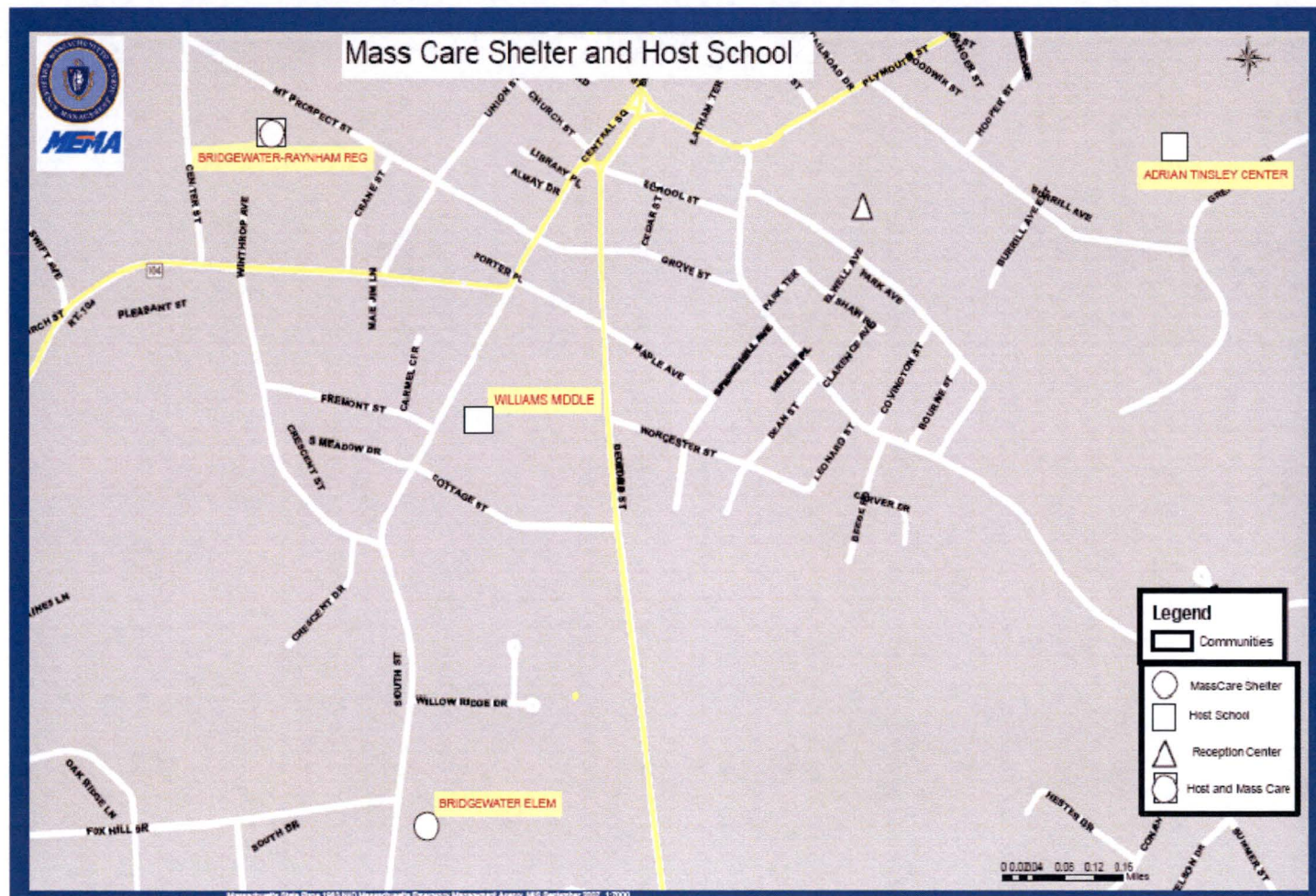


\*Information provided by MEMA, Region II, 8/2011



# PNPS EMERGENCY PLAN

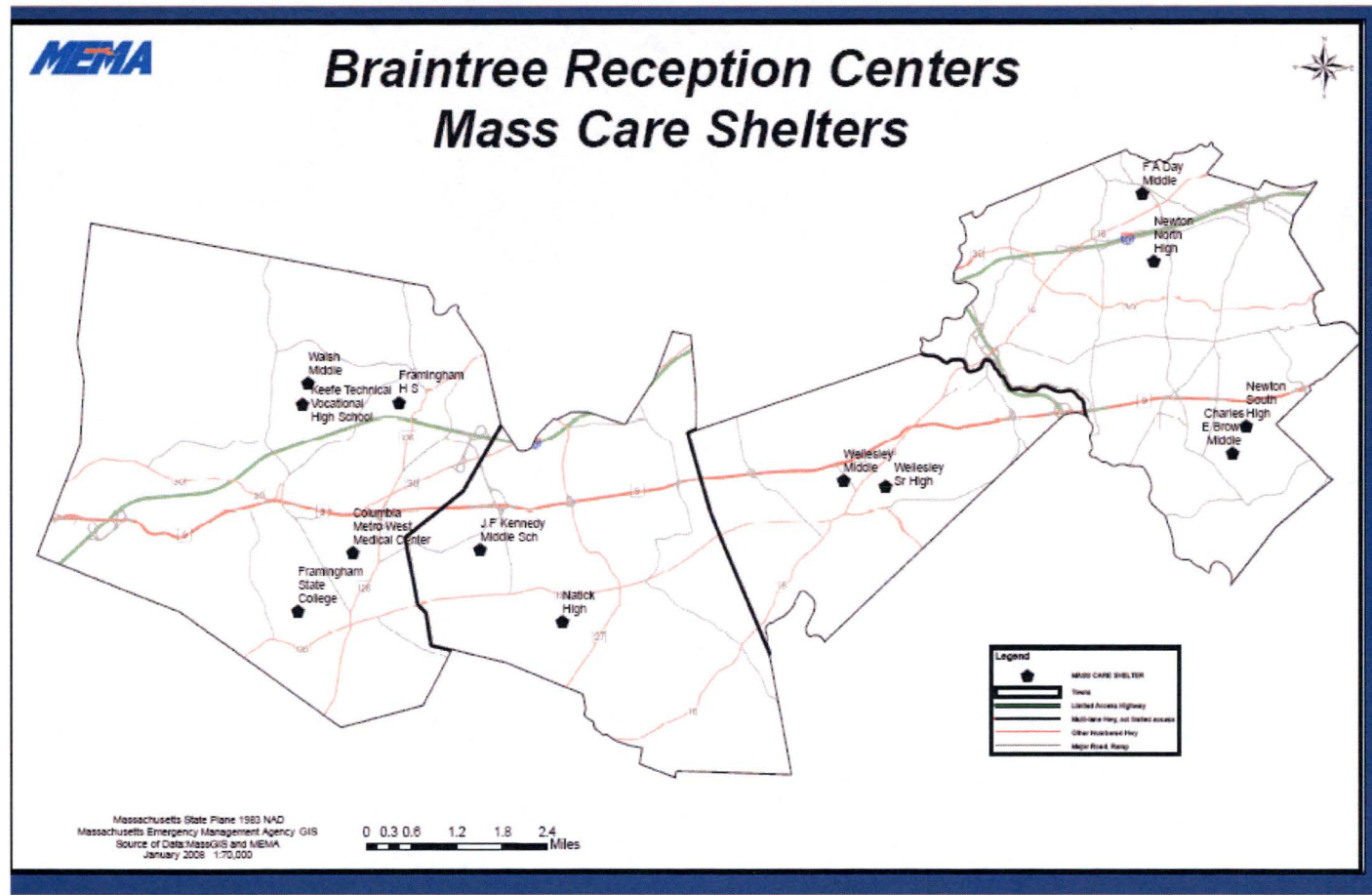
Figure J-4: Reception Center and Host Schools/Mass Care Shelters, Town of Bridgewater



\*Information provided by MEMA, Region II, 8/2011

## PNPS EMERGENCY PLAN

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



\*Information provided by MEMA, Region II, 8/2011



# 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 Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, 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:

<b><u>Dose Limit*</u></b>	<b><u>Activity</u></b>	<b><u>Conditions</u></b>
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 Coordinators 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 general activities limits is held by the Emergency Director for offsite (outside the protected area) ERO personnel through recommendations from the Radiological Assessment Coordinator and the Emergency Plant Manager for onsite ERO personnel through recommendations from the Radiological Coordinator and 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 childbearing 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 Radiological Coordinator or Radiological Assessment Coordinator. Prior to entry into a suspected high radiation area, the individual's current year 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 Dosimeter of Legal Record (DLR) is issued to all emergency response personnel in the protected area. All Level II GET responders wear a DLR every work day; Level I GET responders are provided with a DLR 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 DLRs on a 24-hour per day basis, if necessary, through Entergy company dosimetry service agreements. Emergency workers are instructed to read self-indicating dosimeters frequently, and DLRs 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) and visitors to receive exposures in excess of the EPA General Public Protective Action Guides rests with the Commonwealth and local organizations, except when such emergency workers and visitors are onsite. Authorization of exposures in excess of EPA General Public Protective Action Guides, in this latter instance, rests with the Emergency Plant Manager.

## 5. Decontamination and First Aid

- a. Normal contamination control limits apply in emergency conditions. However, these limits may be modified by the Radiological Coordinator or Radiological Assessment Coordinator should conditions warrant.
- b. Decontamination materials are stored in the Emergency Operations Facility and Assembly Areas. Portable first-aid kits are available in the Engineering and Support Building 1st Floor entrance closest to Primary Access Point in the Medical Cart, Medical Office in the vestibule Central Alarm Station Building, and Old Executive Building within the Fire Tour personnel area. A personnel injury onsite involving possible radioactive contamination is initially treated by an on-shift EMP. 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.



## PNPS EMERGENCY PLAN

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 Beth Israel Deaconess Hospital – Plymouth (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 severe trauma, 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 Radiological Coordinator.
- 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 and drinking 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 and non-PNPS 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: Beth Israel Deaconess Hospital - Plymouth is the primary care facility for treatment of contaminated injured persons, and evaluation of radiation exposure and radionuclide uptake. Beth Israel Deaconess Hospital - Plymouth is located in Plymouth, Massachusetts, and five miles from PNPS.

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

2. Onsite First Aid Capability: Personnel injuries involving possible radioactive contamination are initially treated by an on-shift EMP. Prompt attention is given to life endangering injuries in preference to decontamination. (See Section O, Emergency Response Training, 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, Sample Copies of 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 an 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 Manager, the assigned Team Coordinator and the Radiological Coordinator 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 EOF 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.
  - 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.



## PNPS EMERGENCY PLAN

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 exceeds 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.
  - 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 Executive or a designated alternate is the Recovery Director.

## PNPS EMERGENCY PLAN

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 Operations General 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 Regulatory and Performance Improvement 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 media 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
- Radiation Protection
- Chemistry
- Technical Support
- Engineering Support



## PNPS EMERGENCY PLAN

- 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/Drills

- a. Exercises are conducted biennially 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 may simulate 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. Scenarios for biennial exercises are submitted to the NRC at least 60 days in advance of the exercise date as required by 10 CFR 50 Appendix E.IV.F.2.a.
- b. Exercises/Drills provide an opportunity to evaluate the ability of participating organizations to implement a coordinated response to postulated emergency conditions. In accordance with the PNPS Eight-Year Drill/Exercise Plan, drills and exercises are conducted to ensure that all major elements of the emergency plan and preparedness program are demonstrated at least once in each eight-year period. At least one drill every eight years is started off-hours. Drills/Exercises are scheduled to be conducted at different times of the year. An unannounced drill is performed twice per eight-year cycle in accordance with the Eight-Year Plan.
- c. Scenario elements to be addressed in the eight-year Drill/Exercise Plan, as described in 10 CFR 50 Appendix E.IV.F.2.j include:
  - Hostile Action directed at the site
  - No/Minimal Radiological Release not requiring protective actions
  - Initial classification or rapid escalation to Site Area Emergency or General Emergency
  - Implementation of strategies developed under 10 CFR 50.54(hh)(2)
  - Integration of offsite resources with onsite response



## PNPS EMERGENCY PLAN

2. Specialized Drills: PNPS conducts specialized drills for the purpose of testing, developing and maintaining the proficiency of emergency responders. The specialized drills may include, but are not limited to the following:

- 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 is tested quarterly.

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

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. Offsite Monitoring Team Drills: Offsite Monitoring Team (OMT) 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.
- 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 EverBridge notification system with responders calling in their anticipated arrival times. The anticipated arrival times are then checked to confirm that the PNPS Emergency Response Organization could have been activated in a reasonable amount of time.
  - Activation of EverBridge, with actual response to Emergency Response Facilities.

## PNPS EMERGENCY PLAN

- g. Combined Functional Drills: Periodically, drills are conducted to test the interfacility coordination, communication, and operation among emergency facilities including the EOF, TSC, OSC, Joint Information Center (JIC), Incident Command Post (ICP) and Entergy Corporate.
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 drills or exercises involving only partial participation by offsite agencies, PNPS conducts a full, self-evaluation of activities; NRC representatives may be requested to observe these drills or exercises. For full participation exercises 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 Regulatory and Performance Improvement 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.



# PNPS EMERGENCY PLAN

## **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 or P-EN-TQ-110, "Emergency Response Organization Training". 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 that 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 that may be called upon to provide onsite assistance in the event of an emergency:

- Plymouth Fire Department
- Plymouth Police Department
- 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.
- **Walkthrough Sessions:** Consists of a facility walk through to familiarize PNPS Emergency Response Organization personnel with procedures, communications equipment and facility layout. Walkthrough Sessions also provide the opportunity to discuss facility activities, responsibilities and procedures with an instructor.

## PNPS EMERGENCY PLAN

- 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 Emergency Medical Personnel (individuals qualified as EMTs; RNs, First Responders, and Paramedics) are trained to respond to medical emergencies per PNPS procedure 5.5.3, Medical Emergency Response Procedure.
  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. Detailed training matrices are maintained in NTM5.5, Emergency Response Organization Training, and P-EN-TQ-110-01, "~~Fleet~~ EPlan Training Course Summary".

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.



# PNPS EMERGENCY PLAN

## a. Personnel Responsible for Management of an Emergency

### Emergency Director, Emergency Plant Manager

These positions receive specialized training in the areas of:

- Notifications
- Emergency Classifications
- Protective Action Recommendations
- 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 (Certified Fuel Handlers/Non-Certified Operators) receive routine classroom and simulator training to ensure proficiency in this area.~~ accident assessment.

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~~

## c. Offsite 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.

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

- Equipment and Equipment Checks
- Communications

## PNPS EMERGENCY PLAN

- Plume Tracking Techniques

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 Dose Assessment
- Protective Action Recommendations
- Offsite 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 receives specialized training in the areas of:

- Interfacing with Outside Support
- Organizational Interface



## PNPS EMERGENCY PLAN

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 outlined 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. 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.
  - j. Corporate Support Personnel: Entergy corporate personnel responsible for responding to requests from Pilgrim Station receive training in accordance with existing corporate emergency response procedures and appropriate elements of the PNPS Emergency Plan and Implementing Procedures.
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
    - Purpose of the PNPS Emergency Plan
    - Role of the worker during an emergency
    - Related industry events

## PNPS EMERGENCY PLAN

- 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 or P-EN-TQ-110, "Emergency Response Organization Training". Additionally, PNPS offers initial training to those offsite organizations that 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 Response Organization Training Matrix. The completed training documents certify that the individual is qualified to perform their emergency functions.

- c. Regualification Training: Annual regualification training is provided to PNPS Emergency Response Organization personnel. Regualification training consists of one or more of the following:

- Annual Regualification 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 regualification 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 regualification training. Emergency Planning 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



# PNPS EMERGENCY PLAN

## **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 Planning Staff

1. At least once each calendar year all members of the Emergency Planning 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.
  - Other relevant training as determined by the Emergency Planning Manager.
2. Authority for Emergency Preparedness Effort: The Senior Nuclear Executive 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. Regulatory and Performance Improvement Director: The Nuclear Safety Assurance Director is responsible for the maintenance of the PNPS Emergency Preparedness Program. In maintaining the program, the Regulatory and Performance Improvement\_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 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.

## PNPS EMERGENCY PLAN

- Preparation for and conduct of the Station's drill and exercise program, and ensuring the program meets all regulations and guidelines of the NRC.
- 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.
- Emergency Planning staff is 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 Planning staff provides technical assistance to other PNPS organizations in areas of emergency preparedness.
- Adequate PNPS and EP staff support is provided to support Pilgrim and Offsite emergency response plans.

The Regulatory and Performance Improvement Director is assisted in these responsibilities by the following Emergency Planning staff:

- a. The Emergency Planning Manager 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.



## PNPS EMERGENCY PLAN

- 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 Emergency Planning Staff.
  - Coordinating with Corporate Emergency Preparedness senior management and PNPS site senior management with oversight responsibility for Emergency Preparedness to assure sight emergency preparedness and fleet emergency procedures resources, priorities, and performance standards are balanced for best performance.
- b. Emergency Planning staff members are responsible both for maintaining the operational readiness of the station Emergency Preparedness program and the local offsite and related emergency preparedness programs. Emergency Planning staff report to the Emergency Planning Manager.

Operational readiness activities include:

- 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 onsite 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.
- Oversees the construction, maintenance, and surveillance of the local emergency operation centers and reception centers.
- Oversees the maintenance and readiness of Pilgrim Station's emergency communications equipment.
- Oversees the operation and maintenance of Pilgrim Nuclear Power Station's emergency communications equipment.

## PNPS EMERGENCY PLAN

- Oversees the operational readiness of PNPS emergency response Facilities (i.e., Emergency Operations Facility (EOF), Operations Support Center (OSC), Technical Support Center (TSC), Joint Information Center (JIC), Alternate Emergency Operations Facility (AEOF), and Alternate Joint Information Center (AJIC).
- Oversees the maintenance of the emergency preparedness activity tracking systems.
- Oversees the development and maintenance of the Emergency Telephone Directory (ETD).
- Oversees the maintenance and readiness of Station Prompt Alert and 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).

Local offsite and related activities include:

- 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.
- Ensures that the Emergency Public Information Program is developed and maintained to achieve consistency and compatibility with the Pilgrim Nuclear Power Station program.
- Oversees offsite emergency preparedness activities and provides 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 Planning Department at meetings and functions.
- Ensures that the Emergency Planning Manager is aware of trends and relationships in community activities and actions.



## PNPS EMERGENCY PLAN

- Coordinates the development and maintenance of corporate emergency response procedures and training materials with the Entergy Corporate.
- Participates in the development and implementation of strategies associated with Offsite Emergency Preparedness programs that are responsive to current emergency preparedness regulations.
- Develops and maintains with the State of Rhode Island Emergency Management Agency Radiological Emergency Plans and Procedures for the Ingestion Pathway.

Emergency Planning Staff Members report to the Emergency Planning Manager and are selected based upon qualifications that meet those outlined in position descriptions maintained in Emergency Planning Department 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 Regulatory and Performance Improvement Director is responsible for determining which recommended changes are incorporated into the Plan.

Minor changes in the Emergency Plan such as a change in wording or set point 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 consideration for an immediate update to the plan.

Revisions to the Plan are reviewed by the Onsite Safety Review Committee (OSRC) and all organizations affected by the change prior to approval, in accordance with administrative procedures.

Changes to the Plan are made without NRC approval only if such changes do not reduce 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 reduce or have a potential to reduce 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.).

## PNPS EMERGENCY PLAN

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
- 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

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. This appendix also provides a cross-referenced listing of PNPS Administrative Procedures to applicable PNPS Emergency Plan sections that help maintain the PNPS Emergency Preparedness Program.

All of these procedures are periodically reviewed and approved in accordance with document control requirements established in PNPS procedures and Entergy Quality Assurance Program Manual.

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 Pilgrim Emergency Plan is independently reviewed as part of the Pilgrim In-plant Audit Program. The review is conducted as part of the Entergy Quality Assurance Program in accordance with 10 CFR 50.54(t). All aspects of emergency preparedness, including exercise documentation, capabilities, procedures and interfaces with Commonwealth, state and local governments are reviewed.
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.



# PNPS EMERGENCY PLAN

## 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. 10CFR72.32, Emergency Plan
5. 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
6. NUREG-0696, Functional Criteria for Emergency Response Facilities
7. EPA-400-B-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents
8. FEMA-Guidance Memorandum, MS-1 "Medical Services"
9. PNPS FSAR
10. PNPS Tech Specs
11. HI-STORM 100 Cask System FSAR
12. Reg. Guide 1.101, "Emergency Planning & Preparedness for Nuclear Power Reactors"
13. Entergy Corporate Emergency Response/Recovery
14. 10CFR50, Appendix R
15. SANDIA 77-1725
16. PNPS Nuclear Training Manual
17. INPO Emergency Resources Manual
18. Nuclear Organization Procedure 88A4, "Assignment of Responsibilities in Support of the PNPS Emergency Preparedness Program"
19. National Response Framework (NRF)
20. Interagency Radiological Assessment Program (IRAP)
21. Entergy Quality Assurance Program Manual
22. PNPS Offsite Dose Calculation Manual (ODCM)
23. USNRC Generic Letter 82-33 dated 12/17/1982
24. ANSI N 18.7 – 1976, American National Standard, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants
25. Federal Register Notice Final Rule, "Consideration of Potassium Iodide in Emergency Plans", Volume 66, Number 13, page 5427, dated January 19, 2001
26. FEMA Guidance Memorandum, "R1-TH-88-19, "Unannounced and Off-hours REP Exercises", dated August 2, 1988

## PNPS EMERGENCY PLAN

27. Supplement 3, NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Guidance for Protective Action Strategies" published November 2011
28. Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels", revision 5, dated February 2008.
29. 76FR72560, "Enhancements to Emergency Preparedness Regulations", Federal Register, Volume 76, p. 72560, Washington, DC, November 23, 2011
30. Reg. Guide 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors", November, 2011

# PNPS EMERGENCY PLAN

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

Number	Title	PNPS Emergency Plan Section(s)
EN-EP-313	Offsite Dose Assessment using the Unified RASCAL Interface	I.3, I.4
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-100.1	Emergency Action Levels (EALs)	Table D-1
EP-IP-260, 9.1	Emergency Director	B.2 B.3, B.4, Table B-1
EP-IP-261, 9.1	Emergency Plant Manager	B.5, Table B-1
EP-PI-261, 9.1	Company Spokesperson	B.5
EP-IP-210	Control Room Augmentation	B.5, Table B-1
EP-IP-261	Technical Support Center (TSC) Operations	B.5, Table B-1
EP-IP-225	Severe Accident Management Support	I.1
EP-IP-261,9.15	TSC/OSC Equipment Operation	B.5, Table B-1
EP-IP-262	Operations Support Center (OSC) Operations	B.5, Table B-1
EP-IP-261, 9.5	Radiological Coordinator	B.5, Table B-1
EP-IP-240	Emergency Security Organization Activation and Response	B.5, Table B-1
<del>EP-IP-260, 9.2</del>	<del>EOF Manager</del>	<del>B.5, C.2.b, Table B-1</del>
EP-IP-260, 9.3	Radiological Assessment Coordinator	B.5, Table B-1
<del>EP-IP-260, 9.5</del>	<del>Administration and Logistics Coordinator</del>	<del>B.5, Table B-1</del>
EP-IP-260, <del>9.2,</del> 9.25, 9.26	<del>EOF Manager,</del> Alternate EOF Setup, Directions to AEOF	H.2
EP-IP-260, 9.6 <del>and 9.7</del>	Offsite Communicator, <del>EOF Communicator</del>	B.5, F.1
EP-IP-260, 9.27	EOF Equipment Operation	B.5, Table B-1
EP-IP-310	Offsite Monitoring Team Activation and Response	I.7, I.8, I.9
EP-IP-315	Offsite Personnel Monitoring Team Activation and Response	J.3
<del>EP-IP-330</del>	<del>Core Damage</del>	<del>I.2</del>
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-520	Transition and Recovery	M.1, M.2, M.3, M.4
EP-PI-XXX	Emergency Public Information Procedure Set	G.3, G.4
PNPS 5.5.3	Medical Emergency Response Procedure	K.5, L.1, L.4



## PNPS EMERGENCY PLAN

### 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 Organization and Responsibilities	P.1, P.2, P.3
EP-AD-122	Maintenance of the Emergency Telephone Directory	P.10
EP-AD-133	Emergency Public Information Program	G-1, G-2
EP-AD-302	Facilities and Equipment Surveillances	E.1, E.2, F.3, H.10
EP-AD-413	Emergency Communications Test	F.3, N.2.a
EP-AD-601	Emergency Action Levels Technical Basis Document	D.1, D.2, I.1, I.4, J.7
EN-AD-01.01	NMM Procedure Writer Manual	P.4
EN-EP-306	Drills and Exercises	N.1.b, N.2.a, N.2.c, N.2.e.1, N.2.e.2
EN-EP-308	Emergency Planning Critiques	N.1.b, N.2.a, N.2.c, N.2.e.1, N.2.e.2
EN-EP-310	Emergency Response Organization Notification System	E.1, E.2
EN-LI-102	Corrective Action Process	N.5
PNPS 8.E.71	Surveillance, Maintenance, and Calibration of 160' Met Tower MeDAP Equipment	H.9
PNPS 8.E.72	Surveillance, Maintenance, and Calibration of 220' Met Tower MeDAP Equipment	H.9
PNPS 8.E.73	Meteorological Tower Inspection Guideline	H.9



# PNPS EMERGENCY PLAN

## Appendix 3: Sample Copies of Letters of Agreements: Beth Israel Deaconess Hospital - Plymouth

### PNPS EMERGENCY PLAN

#### AGREEMENT

The Entergy Nuclear Operations, Inc. (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 Beth Israel Deaconess Hospital-Plymouth, Inc. (the "BID Plymouth"), Plymouth, Massachusetts for the reception and treatment of radiation accident cases. BID Plymouth has agreed to designate a physician to consult on such cases. Cases of radiation exposure or contamination will be brought to BID Plymouth and treated by the physician so designated or other members of BID Plymouth's staff which BID Plymouth has asked to assist in primary or secondary care of the radiation cases.

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

Prior to admitting these patients into BID Plymouth, 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 BID Plymouth will be accompanied by a Company representative who is knowledgeable and trained in radiation protection. These individuals will remain with the patient to assist BID Plymouth in addressing its radiological concerns as long as necessary. Once the patient is admitted for medical treatment and the radiological concerns of BID Plymouth 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 BID Plymouth for care and treatment of simulated contaminated and injured personnel for training and drills, the Company agrees to reimburse BID Plymouth 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.

The Company hereby agrees to indemnify, defend, and hold harmless Beth Israel Deaconess Hospital Plymouth and its members, officers, directors, employees and agents from and against any and all liability, losses, damages, suits, causes of action, proceedings, claims, and expenses (including, without limitation, experts' and


attorneys' fees) arising in connection with or as a result of the provision of services under this Agreement.

Nothing in this Agreement, nor any act of either the Company or BID Plymouth, 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 BID Plymouth, or except as provided above, (2) to create any right on the part of BID Plymouth or any third person with respect to the Company and its property.

Signed this 16 day of June 2014.

Entergy Nuclear Operations, Inc.

Beth Israel Deaconess Hospital-  
Plymouth, Inc.

By   
Its Site V.P.

By   
Its President & CEO

## PNPS EMERGENCY PLAN

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

#### ENTERGY NUCLEAR OPERATIONS, INC. EXPENSE REIMBURSEMENT AGREEMENT

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

The Company owns and operates 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., AMR 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.

IN WITNESS WHEREOF the undersigned hereunto set their respective hands this  
9<sup>th</sup> Day of JULY, 2014.

ENTERGY NUCLEAR OPERATIONS,  
INC.

BY: 

ITS: SVP PILGRIM STATION

MORTON HOSPITAL AND  
MEDICAL CENTER, INC.

BY: 

ITS: Kim Bassett President

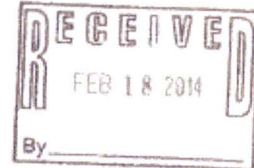
# PNPS EMERGENCY PLAN

## 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



February 14, 2014

Mr. John Dent  
VP Pilgrim, Entergy  
Plymouth, MA 02360

Dear Mr. Dent,

The Plymouth Police Department agrees to respond to the request of the Pilgrim Nuclear Power Station operating personnel or security in the event of an emergency, including those from hostile actions to the site, 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 the evacuation of the public from the site,
3. Provide locations off site for emergency equipment.

The Plymouth Police Department will carry out their emergency duties and exercise their powers granted to them pursuant to the General Laws of the Commonwealth of Massachusetts ("MGL's," specifically MGL 41, Section 98), the Code of Massachusetts Regulations ("CMR's") the Commonwealth of Massachusetts Comprehensive Emergency Management Plan, the Metropolitan Law Enforcement Council ("Metro-LEC"), and the laws of the Town of Plymouth.

This agreement is valid until December 31, 2014

Sincerely,

  
Michael E. Botieri, Chief of Police

Cc Entergy Folder



# PNPS EMERGENCY PLAN

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

**Agreement between the Plymouth Fire Department  
And Entergy Nuclear Generation Company (Entergy Nuclear), or its  
Predecessor Company**  
In the event of an incident at the  
Pilgrim Nuclear Power Station (PNPS)  
This agreement is valid until December 31, 2014

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

1. Plymouth Fire Department will provide Fire Protection and Suppression Assistance for the Pilgrim Station Site and activate the Plymouth Emergency Operations Center in the event of an emergency including those resulting from hostile actions at the site.
  - a) While providing Fire Protection and Suppression Assistance the senior Plymouth Fire Department Officer on scene and the pilgrim Station Fire Brigade Leader shall remain in continuous communications to co-ordinate the fire fighting, life saving and property protection activities.

In practice this means that Pilgrim Station will defer to Plymouth Fire Department expertise and authority for fire fighting, life saving and property protection activities and Plymouth Fire Department will defer to Pilgrim Station expertise and authority involving reactor plant safety.

- b) Entergy Nuclear and Plymouth Fire realize the need for force readiness training for fire crews and interaction of PNPS personnel and fire crews to ensure safe and efficient operations. To ensure force readiness, Entergy Nuclear shall arrange for and provide funding on an annual basis for;
      - I. The Plymouth Fire Department to train and drill on-site with the Station's Fire Brigade.  
Radiological monitoring and instrumentation training for Plymouth Firefighters.
2. Plymouth Fire Department will carry out their emergency duties and exercise the powers granted to them pursuant to the General Laws of the Commonwealth of Massachusetts (MGL), the Code of Massachusetts Regulations (CMR), the Commonwealth of Massachusetts Comprehensive Emergency Management Plan and the bylaws of the Town of Plymouth.
3. The Plymouth Fire Department will dispatch crews to Pilgrim Station to provide emergency medical services when requested.



## PNPS EMERGENCY PLAN

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

4. The Plymouth Fire Department will provide storage facilities (as such space and facilities are available) for the storage of off-site emergency equipment supplied by Entergy Nuclear and required by Planning Section H, Emergency Facilities and Equipment, of NUREG-0654.
- a) This is intended to include all equipment currently stored (a compressor to fill SCBA bottles). Any additional equipment storage needs will be subject to negotiations between the Plymouth Fire Department and Entergy Nuclear and will be subject to available space that the Department can provide.

Approved Entergy Nuclear  
Pilgrim Nuclear Power Station

Print name John A. DeStefano  
Signature [Signature]  
Date 6/13/2014

Approved Plymouth Fire

Print name G. Edward Bradley, Fire Chief  
Signature [Signature]  
Date January 13, 2014

# PNPS EMERGENCY PLAN

## Appendix 3: Sample Copies of Letters of Agreements: Town of Carver



## Board of Selectmen

Carver, Massachusetts 02330  
508-866-3400 • Fax 508-866-4213

Richard J. La Fond  
Town Administrator

Jeanne M. Roby  
Administrative Assistant

Jack Alexander  
Director, Nuclear Assessment  
Pilgrim Nuclear Power Station  
600 Rocky Hill Road  
Plymouth, MA 02360

Subject: Letter of Agreement

Dear Mr. Alexander:

The Town of Carver agrees to allow Pilgrim Nuclear Power Station (PNPS) Emergency Response personnel to utilize a conference room in the basement of Carver Town Hall for an Alternate Emergency Operations Facility (AEOF), in case the PNPS primary EOF, located in Plymouth, is declared uninhabitable for any reason. The Town of Carver further agrees to:

1. Allow for storage of PNPS equipment in conjunction with the Carver Emergency Management Agency EOC; and
2. Permit Pilgrim Station Emergency Preparedness Department personnel access to the AEOF equipment for routing maintenance and surveillance; and
3. If necessary, provide Pilgrim Station Emergency preparedness Department personnel off-hour access to activate the AEOF.

This agreement will continue until either the Town of Carver or Pilgrim Nuclear Power Station provides a 60-day written notice that it can no longer support this agreement.

CARVER BOARD OF SELECTMEN

Frank Mazzilli Francis J. Casey  
Bernadette L. Whiting  
James M. Quinn

Date: May 17, 2000

# PNPS EMERGENCY PLAN

## Appendix 3: Sample Copies of Letters of Agreements: Bridgewater State College



July 13, 2000

Mr. Jack Alexander  
Director, Nuclear Assessment  
Pilgrim Nuclear Power Station  
600 Rocky Hill Road  
Plymouth, MA 02360

Subject: Letter of Agreement

Dear Mr. Alexander:

Bridgewater State College agrees to allow Pilgrim Nuclear Power Station (PNPS) Emergency Response personnel to utilize the auditorium and two conference rooms in the John Joseph Moakley Center for an Alternate Media Center (AMC), in the event the PNPS primary Media Center, located in Plymouth, must be relocated during an emergency. Bridgewater State College further agrees to:

1. Allow for the use of existing equipment resources at the facility;
2. If necessary, provide Pilgrim Station Emergency Response personnel off-hours access to activate the Alternate Media Center.

This agreement will continue until either Bridgewater State College or Pilgrim Nuclear Power Station provides a 60-day written notice that it can no longer support this agreement.

Sincerely,

A handwritten signature in black ink, appearing to read "Miguel Gomes", is written over a horizontal line.

Miguel Gomes  
Associate Vice President for Administration & Finance

MG/dln

OFFICE OF ADMINISTRATION & FINANCE • BOYDEN HALL, ROOM 100  
BRIDGEWATER STATE COLLEGE • BRIDGEWATER, MASSACHUSETTS 02325  
(508) 531-1207 • FAX (508) 531-6127



# 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
CB	.....	Citizen Band
cc	.....	cubic centimeter
CERP	.....	Commonwealth of Massachusetts Comprehensive Emergency Response Plan
CFR	.....	Code of Federal Regulations
CHRMS	.....	Containment High Radiation Monitoring System
cm <sup>2</sup>	.....	square centimeter
CR	.....	Control Room
Cs	.....	Cesium
dc	.....	direct current
DLR	.....	Dosimeter of Legal Record
DNN	.....	Dedicated 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
ERON	.....	Emergency Response Organization Notification
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
ICP.....	Incident Command Post
INPO.....	Institute of Nuclear Power Operations
IRAP.....	Interagency Radiological Assistance Program
ISFSI.....	Independent Spent Fuel Storage Installation
JIC.....	Joint Information Center
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
OMT.....	Offsite Monitoring Team
OSC.....	Operations Support Center
OSRC.....	Onsite Safety Review Committee
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
RASCAL.....	Radiological Assessment System for Consequence AnaLysis
RERP.....	Radiological Emergency Response Plan
SCBA.....	Self-Contained Breathing Apparatus
SGTS.....	Standby Gas Treatment System
SPDS.....	Safety Parameter Display System
Sr.....	Strontium
TTY.....	Teletypewriter
TLD.....	Thermoluminescent Dosimeter
TSC.....	Technical Support Center
μCi.....	microcuries
URI.....	Unified RASCAL Interface

# PNPS EMERGENCY PLAN

## Appendix 5: Evacuation Time Estimates

THIS APPENDIX IS CONTAINED IN ANOTHER VOLUME  
AND HAS LIMITED DISTRIBUTION

**Attachment 4**

Letter Number 2.18.004

Proposed Revisions to the PNPS Site Emergency Plan, Revision 48 (Clean Version)

# PNPS EMERGENCY PLAN

RType H8.22

## 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 Entergy Nuclear Operations, Inc., ("Entergy") 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 Executive. The Emergency Plan and its implementing procedures meet the requirements for quality assurance as set forth in the Entergy Quality Assurance Program Manual.

The Regulatory and Performance Improvement 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.

_____ OSRC Chairman	Date: _____
_____ Regulatory and Performance Improvement Director	Date: _____
_____ General Manager, Plant Operations	Date: _____
_____ Site Vice President (Senior Nuclear Executive)	Date: _____

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

Effective Date: \_\_\_\_\_



# PNPS EMERGENCY PLAN

## LIST OF EFFECTIVE PAGES

<u>Page</u>	<u>Revision</u>
i to ii .....	TBD
iii to viii .....	TBD
Section A.....	TBD
Section B.....	TBD
Section C .....	TBD
Section D .....	TBD
Section E.....	TBD
Section F.....	TBD
Section G .....	TBD
Section H .....	TBD
Section I.....	TBD
Section J .....	TBD
Section K.....	TBD
Section L.....	TBD
Section M .....	TBD
Section N .....	TBD
Section O .....	TBD
Section P.....	TBD
Appendix 1 .....	TBD
Appendix 2 .....	TBD
Appendix 3.....	TBD
Appendix 4.....	TBD

(Appendix 5 contained in separate volume)

# PNPS EMERGENCY PLAN

## Table of Contents

	<u>Page</u>
<b>Part 1: INTRODUCTION</b>	
Section A: Purpose.....	vii
Section B: Background .....	vii
Section C: Scope .....	viii
Section D: Planning Basis .....	viii
Section E: Form and Content of Plan .....	viii
<b>Part 2: PLANNING STANDARDS AND CRITERIA</b>	
<u>Section A: Assignment of Responsibility</u>	
1. Concept of Operations .....	A-1
2. Commonwealth and Local Functions and Responsibilities .....	A-9
3. Agreements in Planning Effort .....	A-9
4. Continuous Coverage .....	A-9
<u>Section B: Station Emergency Organization</u>	
1. PNPS Emergency Response Organization Assignments .....	B-1
2. Authority Over PNPS Emergency Response Organization .....	B-2
3. Succession to Emergency Director .....	B-2
4. Emergency Director Responsibilities.....	B-2
5. PNPS Emergency Response Organization .....	B-3
6. Emergency Response Organization Block Diagram.....	B-5
7. Corporate Emergency Response .....	B-5
8. Private Industry Support .....	B-5
9. Offsite Emergency Assistance to PNPS.....	B-5
<u>Section C: Emergency Response Support and Resources</u>	
1. Federal Response Support and Resources .....	C-1
2. Liaisons .....	C-1
3. Radiological Laboratories.....	C-2
4. Other Assistance .....	C-2
<u>Section D: Emergency Classification System</u>	
1. Emergency Classification .....	D-1
2. Emergency Action Levels.....	D-4
3. Offsite Classification Systems.....	D-4
4. Offsite Emergency Procedures .....	D-4
<u>Section E: Notification Methods and Procedures</u>	
1. Response Organization Notification .....	E-1
2. Notification and Mobilization of Emergency Response Personnel.....	E-1
3. Initial Notification.....	E-2
4. Follow-up Messages .....	E-2
5. Commonwealth and Local Information Dissemination.....	E-3
6. Notification of the Public .....	E-3
7. Messages to the Public.....	E-4

# PNPS EMERGENCY PLAN

## Table of Contents (Cont.)

	<u>Page</u>
<u>Section F: Emergency Communications</u>	
1. Communications/Notifications .....	F-1
2. Medical Communications .....	F-4
3. Communications Drills .....	F-4
<u>Section G: Public Education and Information</u>	
1. Public Information Publication .....	G-1
2. Public Education Materials .....	G-1
3. Joint Information Center .....	G-1
4. Coordination of Public Information .....	G-1
5. Media Orientation .....	G-2
<u>Section H: Emergency Facilities and Equipment</u>	
1. Technical Support Center (TSC), Operations Support Center (OSC), and the Control Room .....	H-1
2. Emergency Operations Facility (EOF) .....	H-2
3. Alternative Facility .....	H-2
4. Emergency Operations Centers (EOCs) and Incident Command Post (ICP) .....	H-3
5. Activation .....	H-4
6. Monitoring Equipment for Classification .....	H-4
7. Offsite Monitoring Equipment .....	H-4
8. Offsite Monitoring Equipment Storage .....	H-5
9. Meteorological Monitoring .....	H-6
10. Protective and Damage Control Equipment .....	H-6
11. Facility and Equipment Readiness .....	H-7
12. General Use Emergency Equipment .....	H-7
13. Collection Point for Field Samples .....	H-7
<u>Section I: Accident Assessment</u>	
1. Plant Parameters and Corresponding Emergency Classification .....	I-1
2. Onsite Accident Assessment Capabilities .....	I-1
3. Release Source Term Determination .....	I-1
4. Effluent Monitor Data and URI .....	I-2
5. Meteorological Information .....	I-2
6. Unmonitored Release .....	I-2
7. Field Monitoring .....	I-2
8. Offsite Monitoring Teams (OMTs) .....	I-2
9. Iodine Monitoring .....	I-2
10. Dose Estimates .....	I-3
11. Commonwealth Monitoring Capabilities .....	I-3

# PNPS EMERGENCY PLAN

## Table of Contents (Cont.)

	<u>Page</u>
<u>Section J: Protective Response</u>	
1. Notification of Onsite Personnel .....	J-1
2. Evacuation Locations .....	J-1
3. Radiological Monitoring .....	J-1
4. Evacuation .....	J-1
5. Accountability .....	J-2
6. Provisions for Onsite Personnel .....	J-2
7. Protective Action Recommendations for the General Public .....	J-3
8. Evacuation Time Estimates .....	J-3
9. Protective Measure Implementation .....	J-4
10. Factors Affecting Protective Measure Implementation .....	J-4
11. Ingestion Pathway Protective Measures .....	J-5
12. Monitoring of Evacuees .....	J-5
<u>Section K: Radiological Exposure Control</u>	
1. Emergency Exposure Guidelines .....	K-1
2. Emergency Radiation Protection Program .....	K-1
3. Personnel Monitoring .....	K-2
4. Non-PNPS Personnel Exposure Authorization .....	K-2
5. Decontamination and First Aid .....	K-2
6. Contamination Control .....	K-3
7. Decontamination of Relocated Personnel .....	K-3
<u>Section L: Medical and Public Health Support</u>	
1. Hospital Services .....	L-1
2. Onsite First Aid Capability .....	L-1
3. Medical Service Facilities .....	L-1
4. Medical Transportation .....	L-1
<u>Section M: Reentry and Recovery Planning</u>	
1. Reentry .....	M-1
2. Recovery .....	M-2
3. Recovery Phase Notifications .....	M-5
4. Total Population Exposure .....	M-5
<u>Section N: Drill and Exercise Program</u>	
1. Exercises/Drills .....	N-1
2. Specialized Drills .....	N-2
3. Conduct of Drills and Exercises .....	N-3
4. Criteria and Evaluation .....	N-3
5. Resolution of Drill and Exercise Findings .....	N-3
<u>Section O: Emergency Response Training</u>	
1. Assurance of Training .....	O-1
2. Classroom and Hands-On Training .....	O-1
3. First Aid Response .....	O-2
4. PNPS Emergency Response Organization Training Program .....	O-2
5. General, Initial and Annual Training Program Maintenance .....	O-5



# PNPS EMERGENCY PLAN

## Table of Contents (Cont.)

	<u>Page</u>
<b>Section P: Responsibility for the Maintenance of the Planning Effort</b>	
1. Emergency Planning Staff .....	P-1
2. Authority for Emergency Preparedness Effort.....	P-1
3. Regulatory and Performance Improvement Director .....	P-1
4. PNPS Emergency Plan Revisions.....	P-5
5. Emergency Plan Distribution.....	P-5
6. Supporting Emergency Response Plans.....	P-6
7. Implementing and Supporting Procedures .....	P-6
8. Cross Reference to Planning Criteria.....	P-6
9. PNPS Emergency Preparedness Program Review.....	P-6
10. Maintenance of the PNPS Emergency Telephone Directory .....	P-6

## **Part 3: APPENDICES**

Appendix 1: References.....	Appendices-1
Appendix 2: Procedure Cross-Reference to Sections of the Plan .....	Appendices-3
Appendix 3: Sample Copies of Letters of Agreements .....	Appendices-5
Appendix 4: Glossary of Terms.....	Appendices-12
Appendix 5: Evacuation Time Estimates .....	Appendices-14

# **PNPS EMERGENCY PLAN**

## **Part 1: INTRODUCTION**

### **Section A: Purpose**

This document describes the emergency preparedness program for Entergy's Pilgrim Nuclear Power Station (PNPS). The terms "PNPS" and "plant" as used in this document include the Independent Spent Fuel Storage Installation (ISFSI), except where it is obvious by usage or context that the term only applies to the power plant. The term "facility," when used to describe the nuclear power plant also includes the ISFSI. 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. A detailed description of the plant is given in the PNPS Final Safety Analysis Report (FSAR). The ISFSI consists of HI-STORM vertical dry spent fuel storage casks on a concrete slab located within the protected area. A detailed description of the HI-STORM storage casks is given in the HI-STORM 100 Cask System 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 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.

10 CFR 72.32 specifies the regulatory requirements for an ISFSI emergency plan. In accordance with 10 CFR 72.32(c), the emergency plan required by 10 CFR 50.47 satisfies the requirements for an emergency plan for an ISFSI which is located within the exclusion area of the nuclear power reactor, and therefore a separate ISFSI emergency plan is not required.

# **PNPS EMERGENCY PLAN**

## **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 Response Planning and Preparedness for Nuclear Power Reactors," 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.

This plan was developed in coordination with the Commonwealth of Massachusetts' Comprehensive Emergency Response Plan, Hazard Annex: "Radiological Emergency Response" 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 in a manner 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

# PNPS EMERGENCY PLAN

## **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 National Response Framework (NRF) is a guide to how the Nation conducts all-hazards response. It is built upon scalable, flexible, and adaptable coordinating structures to align key roles and responsibilities across the Nation. It also describes specific authorities and best practices for managing incidents that range from the serious but purely local, to large-scale terrorist attacks or catastrophic natural disasters. The NRF does not alter the NRC's independent authority or impede its ability to respond to events involving NRC-licensed facilities or materials. As outlined in the Nuclear/Radiological Incident Annex, the NRC is responsible to: (a) independently assess facility conditions and monitor licensee response activities; (b) ensure that appropriate protective action recommendations are communicated to the Commonwealth and local officials; (c) keep the public informed of the NRC's understanding of the event; and, (d) if necessary, the Chairman may invoke his authority to intervene and issue orders that may direct the licensee's response activities on-site.

The NRF is supported by annexes, including the Emergency Support Functions Annex, Support Annexes, and Incident Annexes for specific types of incidents. The annexes provide concepts of operations, procedures, and structures to assist partners with their respective response directives in fulfilling their roles under the NRF.

The Nuclear/Radiological Incident Annex to the NRF states that the NRC is the Coordinating Agency for events occurring at NRC-licensed facilities and for radioactive materials licensed either by the NRC or under the NRC's Agreement States Program. As Coordinating Agency, NRC has technical leadership for the Federal government's response to the event.

The primary Federal response at PNPS supporting an emergency includes:

- 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.



## PNPS EMERGENCY PLAN

- 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.
- Department of Homeland Security(DHS)/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 Taunton, MA.

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.

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

- MEMA State Emergency Operations Center (SEOC)
  - Activates and manages the MEMA Headquarters EOC and activates Public Alert Notification System and 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.
  - Assists in coordination and implementation of protective actions in conjunction with MEMA.

## **PNPS EMERGENCY PLAN**

- Massachusetts Department of Transportation (MDOT)
  - 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 Conservation and Recreation (DCR)
  - Provides emergency notification in state parks.
- Massachusetts Department of Agricultural Resources
  - Controls contaminated foodstuffs.
  - Maintains list of agricultural facilities within the Ingestion Exposure Pathway EPZ.
- Massachusetts Department of Fish and Game
  - Collects shellfish samples within the Ingestion Exposure Pathway EPZ.
  - Controls contaminated aquatic foods.

MEMA Region II, Bridgewater, supports community response and coordinates integrated community functions. It coordinates information and resources between the Commonwealth and communities. The MEMA Region 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
    - Activates and coordinates the State Police Traffic Control Plan.
  - Massachusetts Department of Transportation Districts 4 and 5
    - Coordinates Commonwealth traffic and access control equipment support.
    - Assists local public works departments to assure that roads remain passable.

## **PNPS EMERGENCY PLAN**

- Massachusetts National Guard
  - Coordinates National Guard transportation resources.
  - Coordinates National Guard support for traffic and access control, and security for evacuated areas.
  - Supports MEMA Region II EOC operations.
  - American 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.
  - Provides technical guidance to state agencies.
- 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.

## **PNPS EMERGENCY PLAN**

- 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.
  - 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.



## **PNPS EMERGENCY PLAN**

- **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.
- **Operations Officer**
  - Coordinates EOC operations.
  - Assists EOC staff in resolving operational problems.
  - Ensures EOC staff is updated on events.

## **PNPS EMERGENCY PLAN**

- 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 Joint Information Center.
  - Provides for rumor control on town-specific response actions.
- Shelter Officer
  - Coordinates operations of public shelters.

### **Industry/Private Organizations**

- Beth Israel Deaconess Hospital - Plymouth, located in Plymouth, is the primary care facility for treatment of contaminated injured persons, and for evaluation of radiation exposure 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 injury may be taken to a hospital as designated by MDPH.
- Entergy Corporate has available all company resources for acquiring help from non-affected Entergy nuclear sites and other industry and private organizations. This will include providing all available assistance to maximize corporate management, administrative and technical support for mitigating accident conditions and restoring PNPS to a safe condition. This support also may involve providing technical expertise in areas of engineering, design or construction to assist with unique or complex problems, and requesting specialized services or equipment such as environmental monitoring, whole body counting, and personnel monitoring in support of PNPS emergency response and recovery operations.

## PNPS EMERGENCY PLAN

- 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.
- 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 Director, 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 Figures B-1 a through h.
- 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.

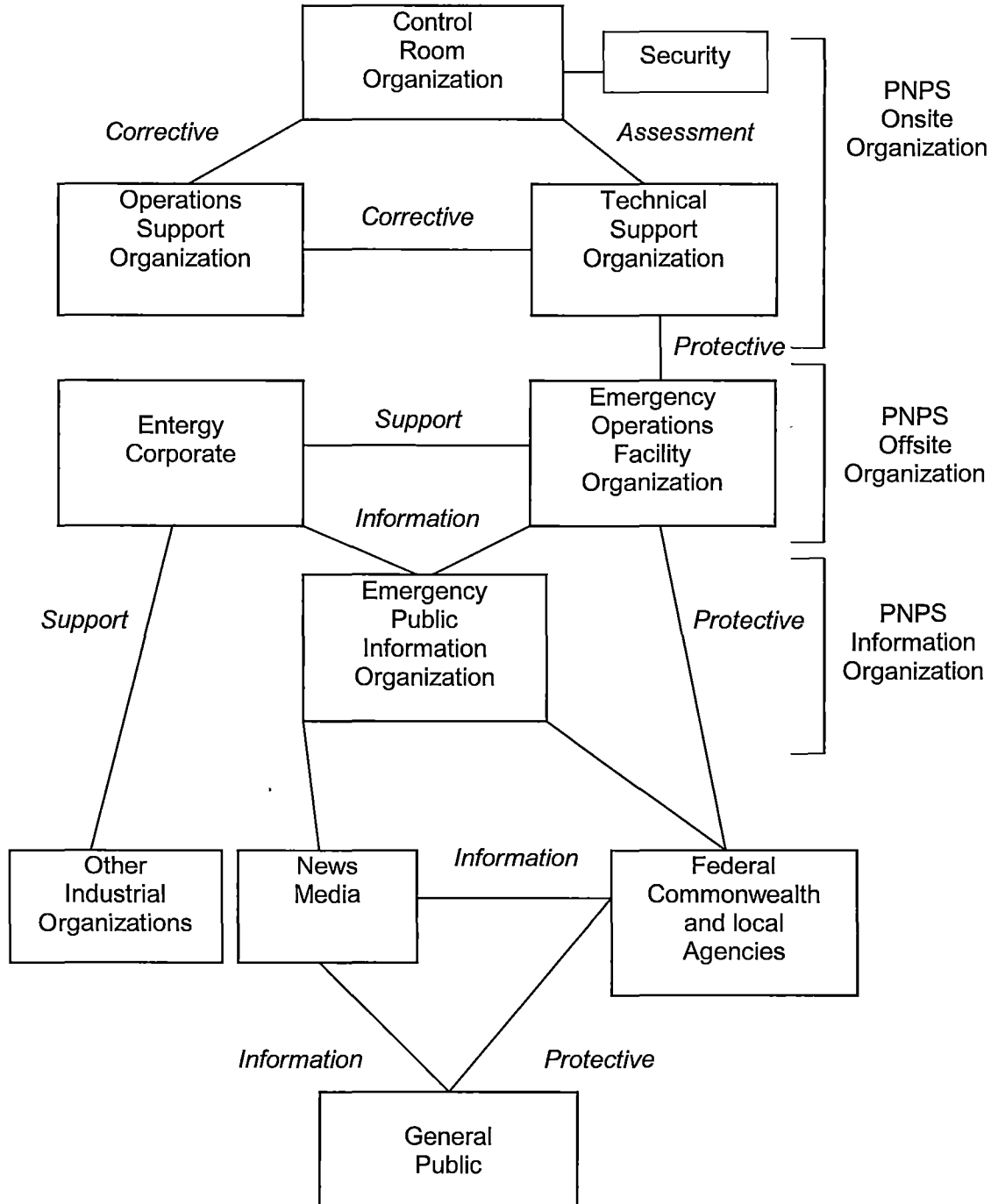
## PNPS EMERGENCY PLAN

- 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, and 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 Regulatory and Performance Improvement 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.



# PNPS EMERGENCY PLAN

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 make the facility operational, 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 Executive having overall authority for Station operations (the Control Room Supervisor (CRS) always retains the responsibility for actual operation of plant systems). The Senior Nuclear Executive 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. Emergency Plan Implementing Procedures outline position responsibilities 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.

- a. The Emergency Director is a member of the PNPS senior management staff.
  - The *Radiological Assessment Coordinator* is normally from the Radiation Protection Group or Plant Management Staff.
  - The *Offsite Communicator* is normally selected from Plant Management Staff (any management level supervisor who has communication skills and can coordinate emergency communication efforts may be used to fill this position).
  - The *Offsite and MEMA Technical Liaisons* are members of Plant Management Staff and/or support organizations.
  - The *Lead Offsite Liaison* is a Senior Engineer or a designated alternate from Plant Management Staff.
- b. The Emergency Plant Manager is a member of the PNPS senior management staff.
  - The *Operations Support Center Manager* is assigned from Plant Management Staff.
  - The *TSC Security Coordinator* is assigned from Security Management Staff.
  - The *Radiological Coordinator* is the Radiation Protection Manager or a designated senior member of Radiation Protection.

## PNPS EMERGENCY PLAN

- c. The Company Spokesperson is a senior member of the Plant Management Staff.
  - The *JIC Manager* is a member of Plant Management Staff familiar with Joint Information 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 CRS assumes the position of Emergency Director until the Senior Nuclear Executive or a designated alternate arrives at the Emergency Operations Facility and assumes the position.
3. Succession to Emergency Director: Initially, the CRS assumes the duties and responsibilities as the Emergency Director. When augmentation of the on-shift complement occurs, the Senior Nuclear Executive or designated alternate reports to the EOF and, once briefed, relieves the CRS 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 CRS to the EOF.
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.
  - Approve notifications/communications to local, Commonwealth, and Federal government agencies and ensure that correct notifications and information updates are made in a timely manner. This responsibility is NON-DELEGABLE. (Note: approval is not required for NRC notifications once ENS is established or NRC is present.)
  - 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 operational), authorize PNPS press releases. This responsibility is NON-DELEGABLE.
  - Ensure other organization's management/decision makers (NRC, Entergy Corp, etc.,) are kept informed of the emergency situation.
  - Monitor plant status following a security or other event affecting plant and personnel safety to ensure ERO response and mobilization remains appropriate.
  - Ensure appropriate emergency procedures are implemented.
  - Ensure all PNPS emergency response facilities are operational and properly staffed.
  - Authorize required assistance from corporate and/or offsite organizations and agencies.
  - Interface with NRC and FEMA response teams located at the EOF and other PNPS facilities.

## PNPS EMERGENCY PLAN

- Authorize radiation exposures for offsite PNPS emergency workers in excess of 10CFR20 limits and use of potassium iodide as a thyroid blocking agent. This responsibility rests with 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 and the Company Spokesperson report directly to the Emergency Director, as do the Radiological Assessment Coordinator, the EOF Technical Advisor and the ICP Security Coordinator.

### 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 CRS 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.
- Waive initial requirements for access authorization to PNPS. This responsibility is NON-DELEGABLE
- Protective actions for onsite PNPS personnel, including directing site evacuation activities, authorizing emergency exposures in excess of lower 10 CFR20 limits and use of potassium iodide. (non-delegable)
- Determination of emergency responder's ability to perform their assigned duties under Fitness For Duty criteria at PNPS.

The Emergency Plant Manager interfaces with the Emergency Director. The Emergency Plant Manager is normally located in the Technical Support Center.

The Operations Support Center Manager supervises emergency repair teams, search and rescue teams, first aid teams, fire fighting and chemistry teams associated with accident mitigation. This position provides for maintenance of accountability for operations personnel dispatched into the plant during the emergency and works with the Emergency Plant Manager in the TSC to provide for appropriate prioritization and dispatch. The Operations Support Center Manager 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 Manager interfaces with the Emergency Plant Manager, TSC Security Coordinator and the EOF Technical Advisor.

The Radiological Coordinator 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 CRS, the on-shift Radiation Protection Supervisor/Technician performs the duties of Radiological Coordinator until relieved.



## PNPS EMERGENCY PLAN

The Radiological Coordinator interfaces with the Emergency Plant Manager and the Operations Support Center Manager.

The TSC Security Coordinator 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 TSC Security Coordinator keeps the Emergency Plant Manager informed of all security concerns as they pertain to mitigation of the emergency. In addition, the TSC Security Coordinator coordinates the security activities of all Pilgrim Station emergency response facilities, and coordinates with the EOF Technical Advisor regarding security in the JIC. Initially, the Lead Security Shift Supervisor performs the duties of the TSC Security Coordinator until relieved.

The TSC Security Coordinator interfaces with the Operations Support Center Manager, the Emergency Plant Manager, the EOF Technical Advisor, the Emergency Director and the ICP Security Coordinator in response to events involving security threats to the site or site personnel.

The Radiological Assessment Coordinator 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 Assessors, the Offsite Monitoring Team Coordinator and Offsite Monitoring Teams and is the Emergency Director's radiological advisor. The Radiological Assessment Coordinator is responsible for radiological exposure controls for all PNPS response personnel outside the Protected Area.

The Radiological Assessment Coordinator interfaces with the EOF Technical Advisor and the Radiological Coordinator.

The Offsite Communicator is responsible for performing offsite communications and notifications with Federal, Commonwealth, State and local emergency organizations and distributing information and forms.

The EOF Technical Advisor is responsible for initial and relief staffing during an extended emergency and logistical support (food, transportation, equipment maintenance, etc.) and for securing the Emergency Operations Facility. The EOF Technical Advisor coordinates with Entergy Corporate as necessary to obtain additional resources.

The EOF Technical Advisor interfaces with the Emergency Plant Manager, the Operations Support Center Manager, the Emergency Director, and the TSC Security Coordinator.

The Lead Offsite Liaison is responsible for assisting the Commonwealth and local authorities in interfacing with the PNPS ERO through the Offsite Liaisons at the Plymouth EOC and MEMA Technical Liaison.

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 Joint Information Center (JIC) 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 JIC Manager, Emergency Director and Public Information Officers from Commonwealth and Federal government agencies.

## PNPS EMERGENCY PLAN

The JIC Manager is responsible for the efficient operation of the PNPS public information effort at the Joint Information 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: Entergy Corporate provides support to the PNPS Emergency Response Organization. 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.
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, including those resulting from hostile actions at the station:
  - a. The Plymouth Fire Department has agreed, as requested by the PNPS Control Room to Plymouth Fire, to provide:
    - Fire protection assistance for the site.
    - Coordination of emergency ambulance services including ambulances and emergency medical technicians as well as the transport of contaminated and injured personnel or radiation injury victims.
    - 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, as requested by the PNPS Control Room or Security to Plymouth Police, to provide local law enforcement as described in a separate agreement maintained by PNPS Security and Plymouth Police, and 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.

## PNPS EMERGENCY PLAN

- c. Beth Israel Deaconess Hospital - Plymouth and Morton Memorial Hospitals have agreed to provide medical treatment to contaminated and injured personnel or radiation injury 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. The Town of Carver has agreed to provide facilities for the PNPS Alternate Emergency Operations Facility.
- e. Bridgewater State University provides facilities for the PNPS Alternate Joint Information Center.

Sample copies of these letters of agreement are displayed in Appendix 3 of this Plan. The original letters are maintained in the Emergency Planning files. Letters of Agreement are renewed annually or at a frequency prescribed in the document.

# PNPS EMERGENCY PLAN

Table B-1: Minimum Staffing Requirements for the PNPS ERO <sup>(\*)</sup>

Functional Area	Major Task	Onshift Pos.No.	Position Title	Response
Plant Operations	Plant Stabilization	1	Control Room Supervisor	On Shift#
Assessment of Operational Aspects	Accident Mitigation	(1) 2,3	Control Room Supervisor Non-Certified Operator (NCO) (2)	On Shift# On Shift#
Emergency Direction	Emergency Classification	(1)	Control Room Supervisor	On Shift#
Emergency Control	PARs	(1)	Control Room Supervisor Emergency Director	On Shift# 60 min.
Notification and Communications	Notification of PNPS, Local, Commonwealth, and Federal personnel and Maintain Communications	(1) (2) (2)	Control Room Supervisor NCO Offsite Communicator ENS Communicator (NCO)	On Shift# On Shift# 30 min. On Shift#
Rad Accident Assessment	EOF Direction		Emergency Director	60 min.
Ops Accident Assessment Support	Offsite Dose Assessment	4	RP Technician*** Radiological Assessment Coord	On Shift# 30 min.
	Offsite Surveys		OMT Member (2) OMT Member (2)	30 min. 60 min.
	Onsite and In-plant Surveys	(4)	RP Technician RP Technician	On Shift# 60 min.
	Chemistry / Radiochemistry	(4)	RP Technician	On Shift#
Plant System Engineering	TSC / OSC Direction		Emergency Plant Manager	60 min.
Repair and Corrective Actions	Technical Support		Engineering Coordinator	60 min.
	Equipment Repairs		Nuclear Maint. Technician	30 min.
	Corrective Actions	(3)	NCO Nuclear Maint. (Electrical)	On Shift# 60 min.
Protective Actions (In Plant)	Radiation Protection, Access Control, RP Coverage, Personnel Monitoring, and Dosimetry	(4)	RP Technician*** RP Technician RP Technician	On Shift# 30 min. 60 min.
	Fire Fighting		Per the Fire Protection Plan Plymouth Fire Dept.	On Shift# On Call
	Rescue Ops and First Aid		EMP**** 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.

\*\*\* May be provided by shift personnel assigned other functions.

\*\*\*\* (EMP) Emergency Medical Personnel: individuals qualified as EMTs, RNs, First Responders, or Paramedics per PNPS Procedure 5.5.3.

NOTES: Response times are based on optimum travel conditions.

On Shift Position #2 is Assistant to Offsite Communicator and can be replaced by a NCO that is qualified for the task.

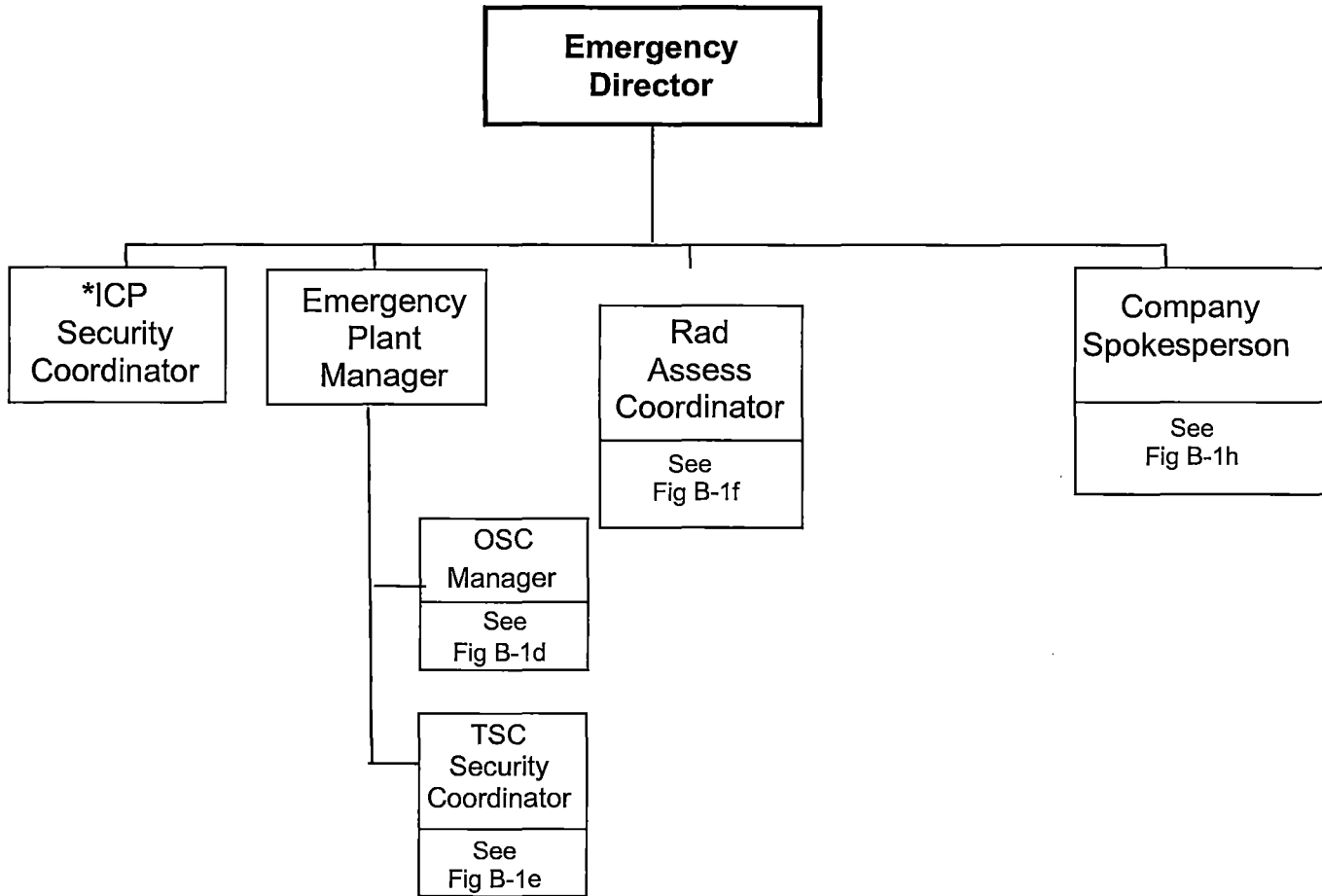
On Shift Position #2 or 3 can be filled by a NCO that is qualified for the task

(\*) This table B-1 is incorporated into the Emergency Plan in accordance with USNRC Generic Letter 82-33 dated 12/17/82 and incorporates within 30 days of approval the conclusions of the PNPS Analysis of Proposed Post-Shutdown On Shift Staffing which is a part of the Emergency Plan in accordance with 10CFR50 Appendix E, Section IV. A. 9 and maintained as a separate document.



# PNPS EMERGENCY PLAN

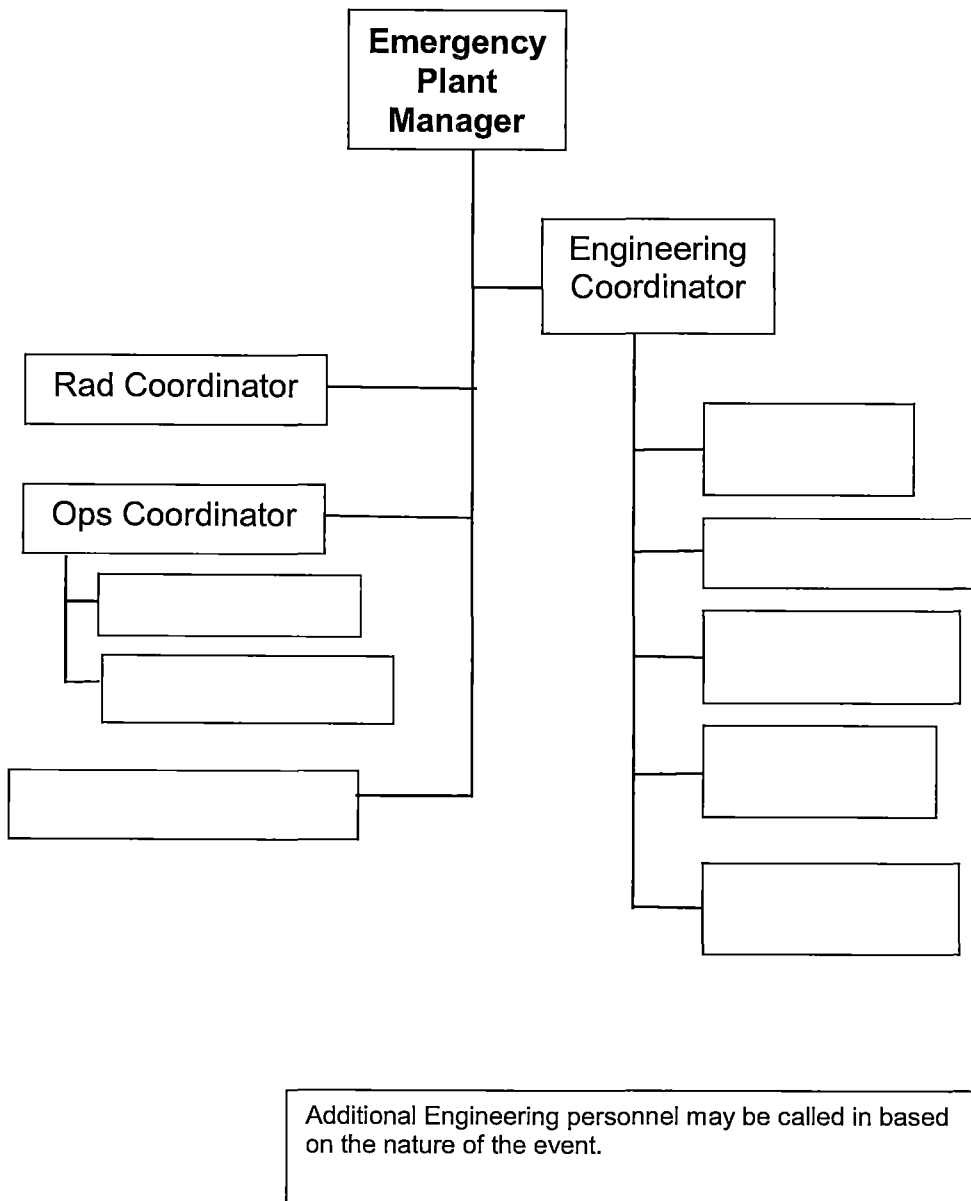
Figure B-1a: PNPS Emergency Response Organization Management Leads



\* Hostile Action Based Events Position

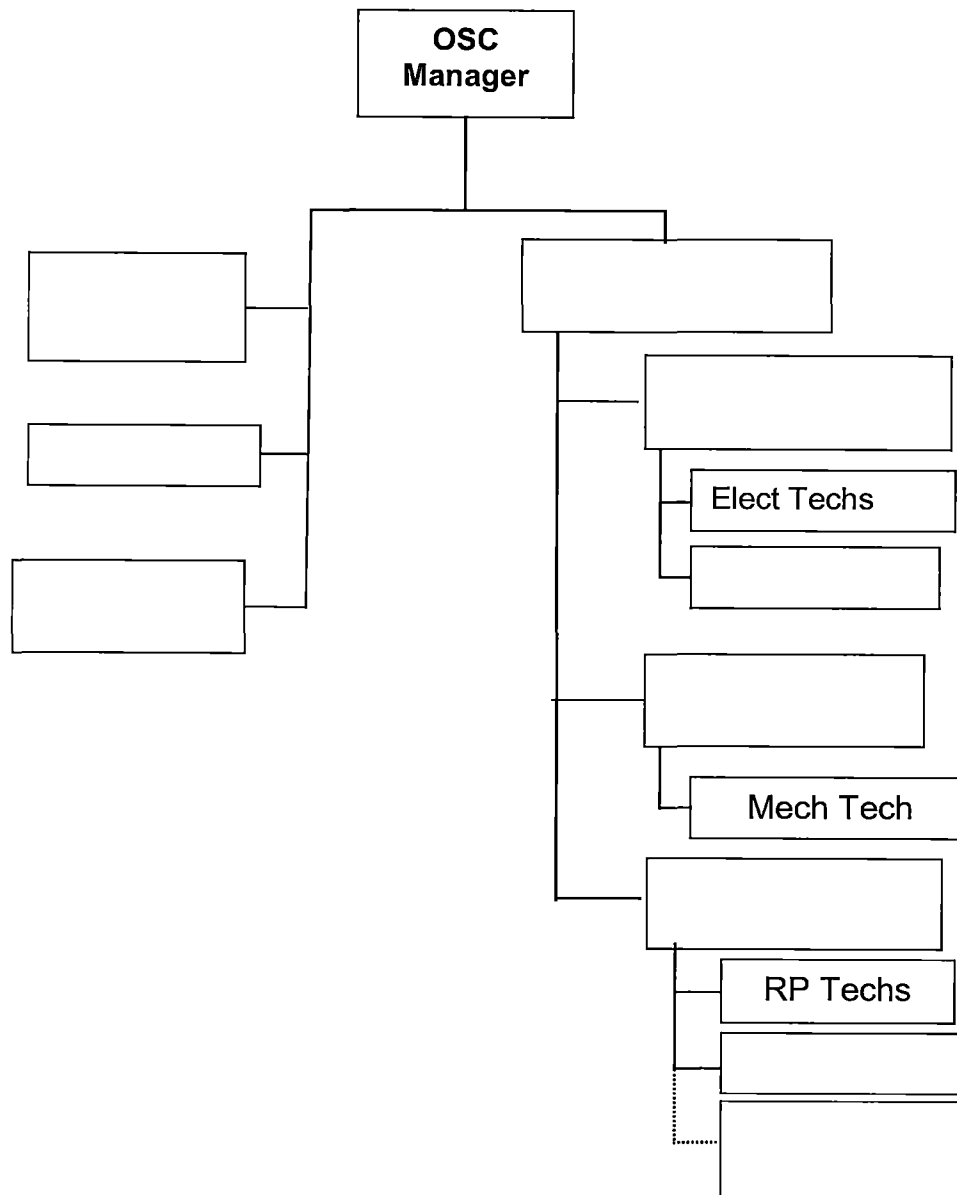
# PNPS EMERGENCY PLAN

Figure B-1c: Defueled Technical Support Organization



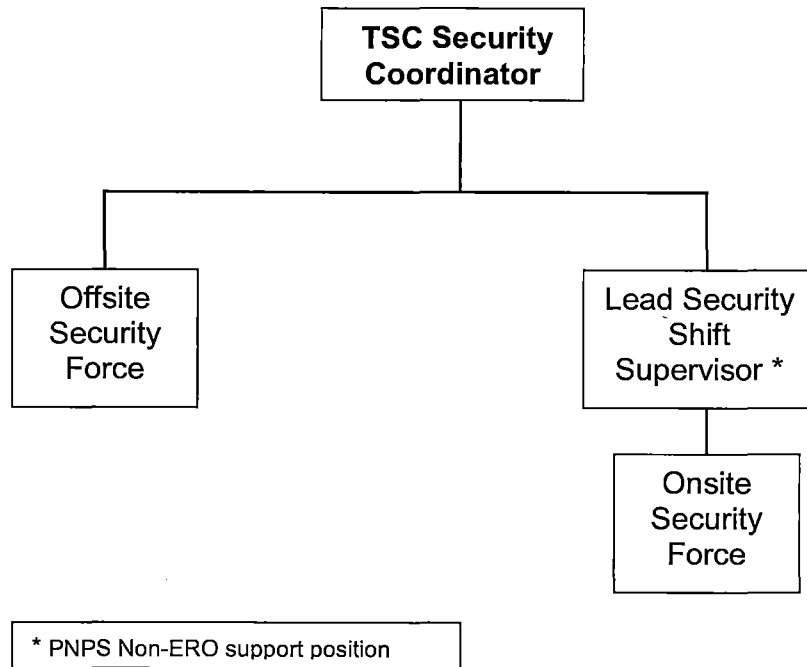
# PNPS EMERGENCY PLAN

Figure B-1d: Defueled Operations Support Organization



# PNPS EMERGENCY PLAN

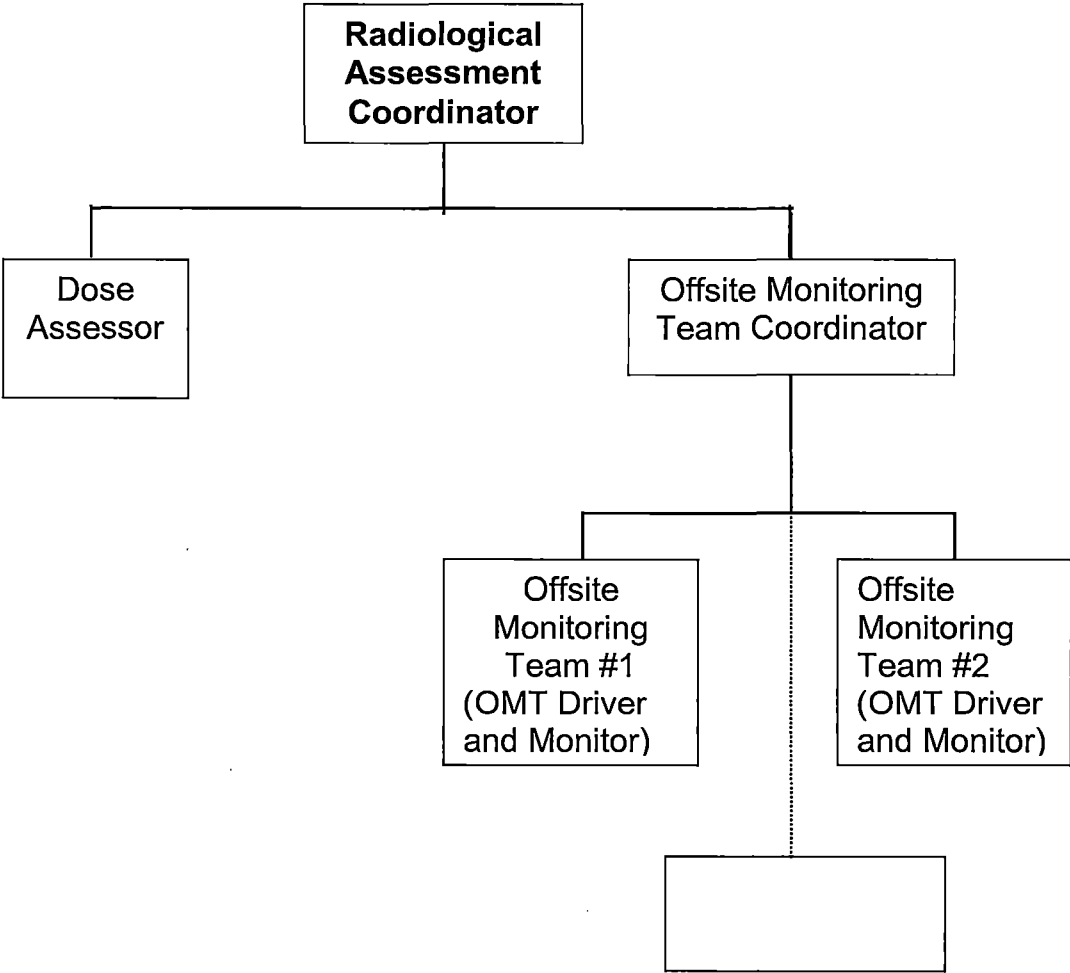
Figure B-1e: Emergency Security Organization





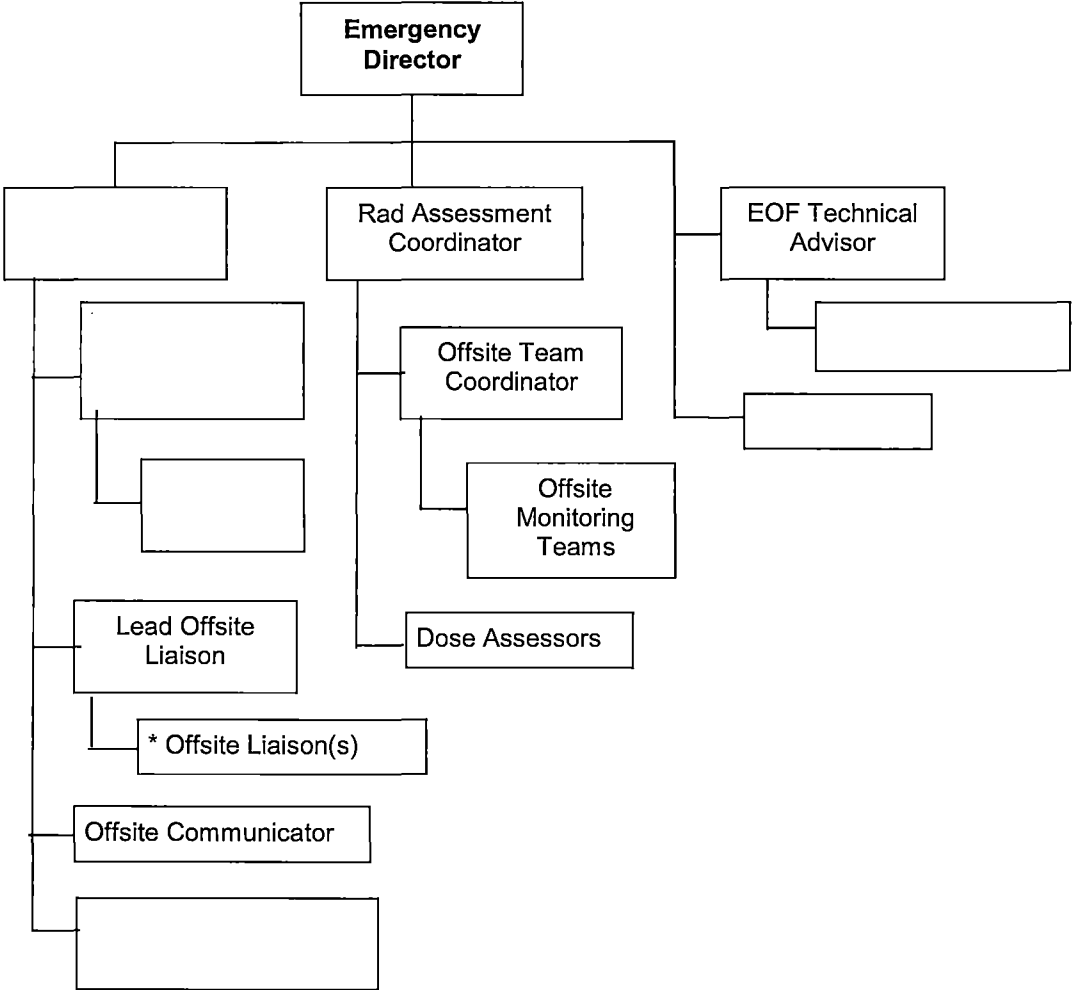
# PNPS EMERGENCY PLAN

Figure B-1f: Offsite Radiological Assessment Organization



# PNPS EMERGENCY PLAN

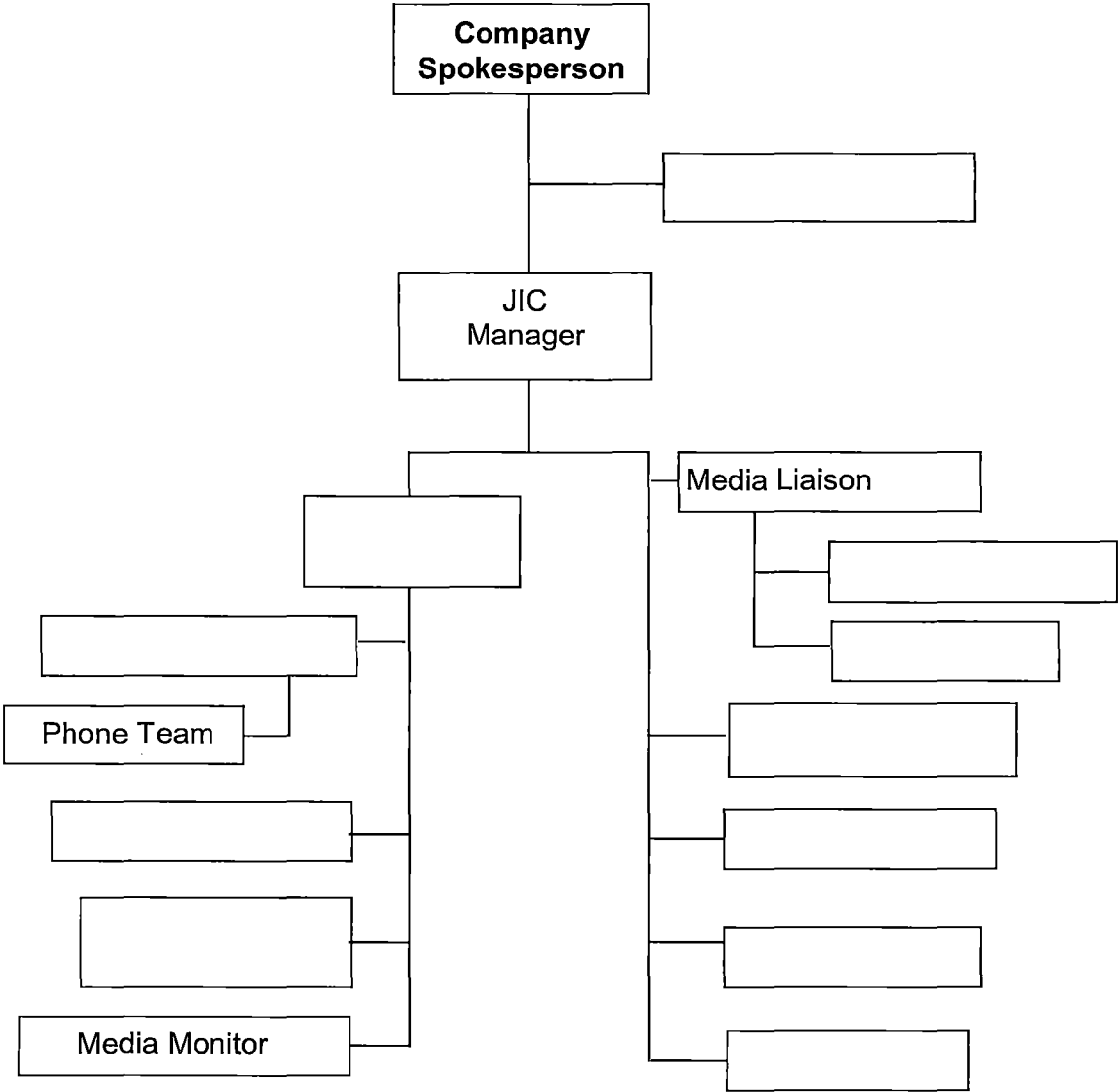
Figure B-1g: Emergency Operations Facility Organization



- Located at Commonwealth and Plymouth EOCs

**PNPS EMERGENCY PLAN**

Figure B-1h: Emergency Public Information 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 National Response Framework (NRF). 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 the NRF, 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 Plymouth EOCs to act as communications liaisons and to provide clarification of emergency response information.
  - c. Upon activation of the EOF, the Lead Offsite Liaison is responsible for establishing and maintaining communications with offsite representatives in the Duxbury, Carver, Kingston and Marshfield EOCs.



## PNPS EMERGENCY PLAN

3. Radiological Laboratories: If the offsite radiological monitoring and environmental sampling operation exceeds the capacity of the PNPS capabilities, the radiological analytical capability of other non-affected Entergy nuclear sites, Commonwealth and Federal agencies and other utilities can be used to analyze radiological samples. As discussed in Section A.1, this additional capability is integrated into existing support efforts and concept of operations in responding to a declared emergency at PNPS. Section H.6 also provides more details on the offsite radiological monitoring support that can be used at PNPS.
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 Operations (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 sites 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 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. However, during a safeguards contingency event, actions may be taken that depart from the immediate requirements specified for each of the four classification levels when those actions are immediately needed to protect the health and safety of members of the public or the plant staff. Those actions may include suspension, delay or modification of activities that could endanger the safety of members of the public, plant staff or security force or which could interfere with an effective response to the safeguards contingency event. 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 the example conditions of 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. PNPS maintains the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and promptly declares the emergency condition as soon as possible following identification of the appropriate emergency classification level. The four classification levels are:
  - a. **Unusual Event** - Event(s) are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

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 of the PNPS Emergency Response Organization to standby (portions of the organization may be activated at this classification).

## PNPS EMERGENCY PLAN

- Notification of the Nuclear Regulatory Commission (NRC) immediately after notification of the appropriate Commonwealth and Local Agencies and not later than an hour after classification.
  - 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 transmission of an Initial Notification Form indicating that the event has been terminated.
- b. Alert – Event(s) are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or probable damage to site equipment because of Hostile Action. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels. 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), Joint Information Center (JIC), and notification of Entergy Corporate.
- Notification of the NRC immediately after notification of the appropriate Commonwealth and Local Agencies and not later than an hour after classification.
- 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, Commonwealth, State, and Local) within 8 hours.

## PNPS EMERGENCY PLAN

- c. Site Area Emergency - Event(s) are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or Hostile Action that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond 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.
  - Activation of the PNPS Emergency Response Organization which includes activation of the TSC, OSC, EOF, Joint Information Center and Corporate Emergency Response Group. Offsite Monitoring Teams are sent to staging areas or dispatched to monitor for releases of radiation to the environment.
  - Notification of the NRC immediately after notification of the appropriate Commonwealth and Local Agencies and not later than an hour after classification.
  - 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, Commonwealth, State and Local) within 8 hours.
- d. General Emergency - Event(s) are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or Hostile Action that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline 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.



# PNPS EMERGENCY PLAN

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, Joint Information Center and Corporate Emergency Response Group. Offsite Monitoring Teams are sent to staging areas or dispatched to monitor for releases of radiation to the environment.
  - Notification of the NRC immediately after notification of the appropriate Commonwealth and local agencies and not later than an hour after classification. 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.
  - Issuance, as a minimum, based upon plant conditions, initial protective action recommendations to affected EPZ sub-areas. Section J.7 provides a detail description of the possible recommendations that may be issued at the General Emergency classification including the consideration of administering potassium iodide (KI) to the general public.
  - Consideration of relocating the Joint Information Center to its alternate site, based upon radiological or other conditions, such as a Commonwealth-directed evacuation of subarea 7.
  - 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, Commonwealth, State and local) within 8 hours.
2. Emergency Action Levels: The symptoms and events outlined in Table D-1 encompass the example conditions based on Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels", Revision 5, February 2008. 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.

[illegible]



[illegible]

# 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 Emergency Management Agency (MEMA), notified by a dedicated notification network, or alternatively with BECONS or commercial telephone as backups. The Massachusetts Emergency Management Agency (MEMA) notifies the Massachusetts Department of Public Health (MDPH), MEMA Region II and Braintree using commercial telephone lines.
  - The local communities within the Plume Exposure EPZ and reception communities are notified by a dedicated notification network, 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, the PNPS Emergency Response Organization is 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 the Emergency Response Organization and related facilities is required. If the nature of the event threatens the safety of the ERO, onsite personnel may be directed to the Alternative Facility at the Chiltonville Training Center or requested to remain in place until the security of the site is restored.

Announcements are made from the Control Room over the plant public address system to notify on-site personnel of plant-related emergency response information. In addition to the public address system, emergency organization personnel are notified by pagers or telephone calls using the EverBridge notification system. Backup systems to EverBridge include the use of the EverBridge alternate activation process or initiating telephone call-outs of emergency response personnel.

Non-emergency station response is discussed under Station Procedure 1.3.12.1, "Non-Emergency Notification of Management".



## PNPS EMERGENCY PLAN

3. Initial Notification: The initial emergency message form includes information about:

- Notification Type, i.e. "This is a Drill" or "This is an Actual Event."
- Identity of caller and receiver of call
- 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 initial notification will also include protective action recommendations to the affected EPZ sub-areas. Section J.7 provides a detail description of the possible recommendations that may be issued at the General Emergency classification.

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.

## PNPS EMERGENCY PLAN

- m. Request for any needed onsite support by offsite organizations.
  - n. Prognosis for worsening or termination of event based on plant information.
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 Massachusetts Emergency Management Agency and 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 thirteen (113) large scale electronic sirens and five (5) 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.

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. EAS messages are supplemented by news advisories prepared by the Massachusetts Emergency Management Agency.

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 receives notification from the Harbor Master and U. S. Coast Guard boats equipped with public address systems. Additional notification is also completed by marine and Citizens Band (CB) radios to those boats that are radio equipped.

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

## PNPS EMERGENCY PLAN

7. Messages to the Public: The Commonwealth has developed draft EAS and News Advisory messages that are intended for the public. These draft messages are included as part of the Commonwealth's plan and procedures 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 Commonwealth of Massachusetts maintains a stockpile of KI to be made available to emergency workers, institutionalized persons who cannot be evacuated, and the general public. The MDPH and MEMA provide information about the use of KI and how and where to obtain it. PNPS also provides supporting information for messages through the MEMA.

# PNPS EMERGENCY PLAN

## **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 ensuring 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 site radiological monitoring teams. Table F-2 shows available communications equipment within each of the PNPS emergency response facilities.

PNPS utilizes the EverBridge notification system to rapidly notify members of the PNPS Emergency Response Organization. EverBridge is a computer system (both hardware and software) that notifies the ERO of an emergency via a number of modalities (i.e., telephone, pager, text, email). This system provides a primary notification through the computerized system with alternate activation capability. The decision process used to activate EverBridge is specified in appropriate Emergency Plan Implementing Procedures.

If the EverBridge computerized system should fail, Emergency Preparedness Implementing Procedures specify the course of action to be taken. These procedures require using the alternate EverBridge activation, if available, or initiating individual telephone call-outs of emergency response personnel.



## PNPS EMERGENCY PLAN

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 NRC notification. In addition to the ENS, administratively dedicated telephones serving as the Health Physics Network (HPN) are used in the TSC and EOF for the transmittal of radiological information to the NRC. It is under the National Response Framework (NRF) that PNPS requests assistance from Federal agencies.

Additional arrangements have been made to allow for the establishment of NRC communications equipment at the EOF.

- 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.
  - Nuclear Incident Advisory Team (NIAT) Radio: This radio system is used by the Commonwealth to direct radiological teams from the EOF.
  - PNPS Offsite Monitoring Team Radio: This repeater radio frequency is used 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 back up 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 uninterruptible power supply (UPS) and generator backup power.
  - Local Commercial Telephone System: This system provides standard commercial telephone service through the Verizon infrastructure, consisting of central offices and the wire line and microwave carrier.
  - Cellular Telephones: A cellular telephone is provided in the CRS's office in the Control Room, TSC, OSC, CAS and SAS as a backup to the local commercial telephone system.
  - Satellite Telephones: A satellite telephone is provided in the CRS's office in the Control Room and EOF as a backup to the local commercial telephone system.

## PNPS EMERGENCY PLAN

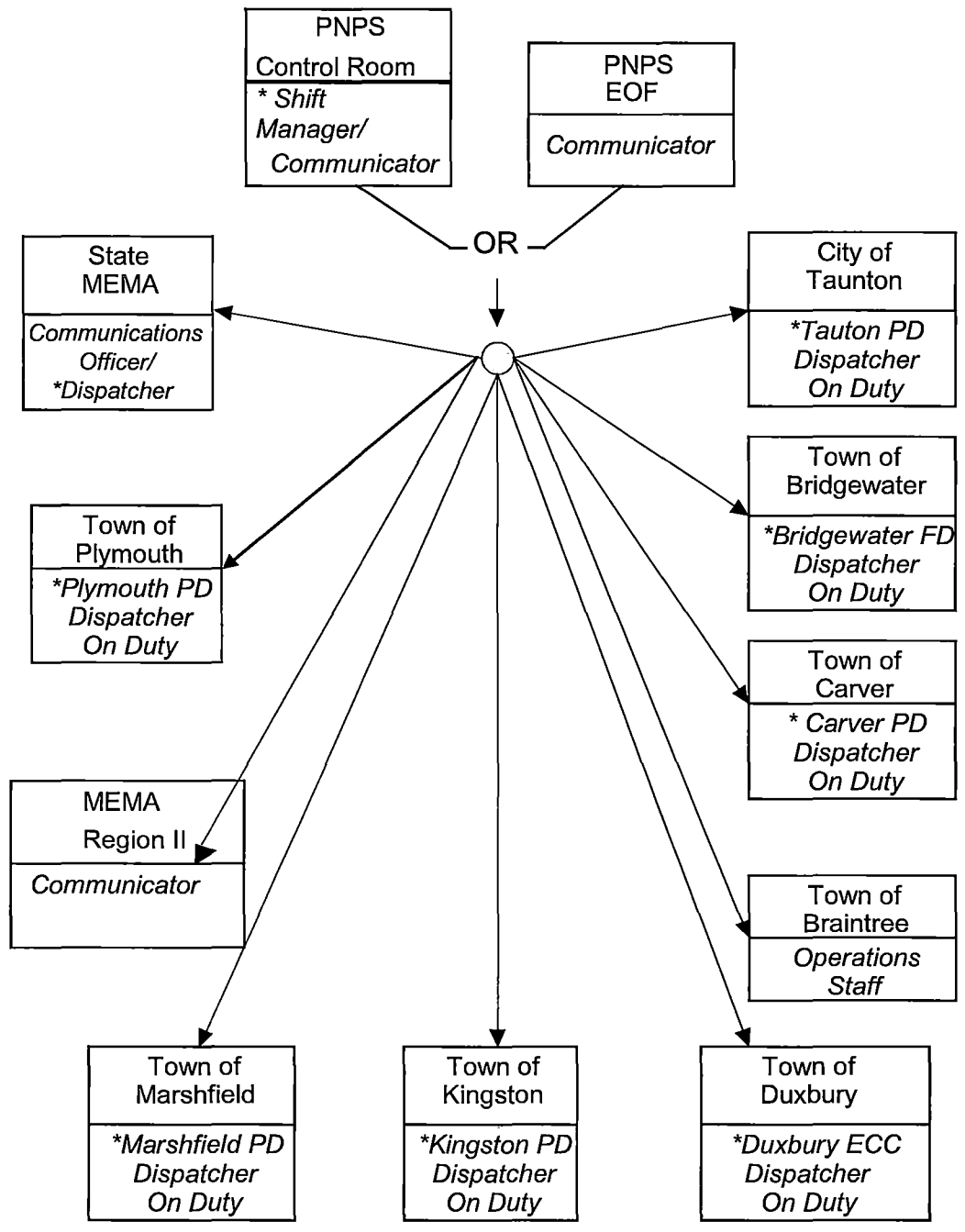
- c. Special Communication Links: Separate communications methods exist among the various emergency response facilities in order to ensure reliable and timely exchange of information. These methods consist of the following:
- Dedicated Notification Network (DNN): The DNN is a dedicated notification network that provides a notification link from PNPS (Control Room, TSC and EOF) to each offsite agency. (CR-PNP-2014-323, CA-02) The DNN is the primary notification method from PNPS to offsite authorities. Figure F-4 depicts the initial notification scheme. BECONS and commercial telephones are the backup for 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 - Joint Information Center: Designated telephone circuits between the EOF and the Joint Information 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 Joint Information Center.
  - Mitigation Line: An administratively dedicated telephone that provides conferencing capability among the Control Room, TSC, EOF and alternate EOF for use by Operations and Engineering personnel.
  - 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.
  - Rad Data Phone: An administratively dedicated telephone that provides conferencing capability among the Control Room, TSC, EOF and alternate EOF. The Rad Data Phone is used to transmit radiological information between the 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 and technical personnel located in each of the facilities.
  - EverBridge: The primary PNPS ERO notification system utilizing various modalities including telephone, pager, email, SMS text messaging as well as an alternate activation capability using commercial telephone.
  - 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.

## PNPS EMERGENCY PLAN

- 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.
  - 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, Beth Israel Deaconess Hospital - Plymouth, 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 Commonwealth, 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. PNPS F&E Staff maintain 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 (Dedicated Notification Network)
2. BECONS
3. Commercial Telephone



# PNPS EMERGENCY PLAN

Table F-1: Communications Matrix

	Control Room	TSC	OSC	EOF	AEOF	JIC	Corporate	Primary Access Pt.
Control Room								
TSC	2,6,7,9,10,15,16,19,24,25,28							
OSC	1,2,4,6,7,9,25,28	9,28						
EOF	1,2,4,5,6,7,9,10,15,16,19,24,27	1,2,4,5,7,9,10,15,16,19,24,27	7,9,10					
AEOF	1,5,7,10,15,16,19,24	4,7,10,15,16,24	7,9,10	1,4,5,10,15,16,20,24				
JIC	10,19	10,19	10	10,14,19	10			
Corporate	10,19	10,19	10	10,19	10	10		
Primary Access Point	1,2,6,9,10	1,2,6,9	2,9,10	1,2,9,10	1,10	10	10	
EPZ Towns	5,10,12,13,19,27	5,10	10	5,10,19,20,27	5,10,19	10,19	10	10,12,13
Reception Center Towns	5,10,19,27	5,10	10	5,10,19,20,27	5,10,19	10,19	10	10
MEMA	5,10,19,27	5,10	10	5,10,19,20,26,27	5,10,19	10,19	10	10
Rhode Island	10	10	10	10,19	10,19	10,19	10	10
NRC	9,10, 18,19,23	9,10,17,18,23	10,23	10,17,18,19,23	10,19	10,19	10	10
Beth Israel Deaconess Hosp	10	10	10	10	10	10	10	10
OMT	4,28	4,28	4,28	4,26,28	4,28			28
State Police	1,10,11,19	1,10,19	10	1,10,11,19	1,10	10,19	10	1,10,11

	EPZ Towns	Reception Center Towns	MEMA	Rhode Island	NRC	Beth Israel Deac.Hosp.	OMT
Control Room							
TSC							
OSC							
EOF							
AEOF							
JIC							
Corporate							
Primary Access Point							
EPZ Towns	5,10,20						
Reception Center Towns	5,10,20	5,10,20					
MEMA	5,10,19,20	5,10,19,20					
Rhode Island	10	10	10				
NRC	10	10	10	10			
Beth Israel Deaconess Hosp	10,21	10,21	10,21	10	10		
OMT						28	4,28
1. Pilgrim Alert Radio	7. Rad Data Phone	13. Ringdown-Plymouth Fire		19. Facsimile Equipment		25. Alt. Shutdown Comm Radio	
2. Security Radio	8. Reserved	14. EOF- Joint Information Center		20. RACES Radio (2 Meter)		26. NIAT Radio	
3. (Spare)	9. PNPS Telephone System	15. Plant Data Phone		21. Medical Radio		27. DNN	
4. OMT Radio	10. Local Telephone System	16. Emergency Conference Line		22. (Spare)		28. Cellular Telephone	
5. BECONS	11. Ringdown-State Police	17. Health Physics Network		23. Fed Telecom System (FTS)			
6. Fire Brigade Radio	12. Ringdown-Plymouth Police	18. Emergency Notification System		24. Mitigation Line			

# PNPS EMERGENCY PLAN

Table F-2: Communications Equipment

		CONTROL RM	TSC/OSC	EOF	AEOF	PAP	JIC	CAS	SAS
RADIOS	Pilgrim Alert Radio	<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"/>
	PNPS Security Radio	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	NIAT Radio			<input checked="" type="checkbox"/>					
	PNPS Offsite 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"/>	<input checked="" type="checkbox"/>				
	RACES Radio (2 Meter)			<input checked="" type="checkbox"/>					
	Plymouth Fire Radio							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Plymouth Police Radio							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TELEPHONES	Dedicated Notification Network (DNN)	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
	PNPS Telephone 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"/>
	Fixed Cellular Telephone System	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Local Commercial Telephone 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"/>		
	Ringdown Plymouth Police Department	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Ringdown Plymouth Fire Department	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Ringdown State Police	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Satellite Telephone	<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"/>				
	Plant Data Phone (PDP)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
	Rad Data Phone	<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"/>				
	Emergency Notification System (ENS)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
	Health Physics Network (HPN)		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
OTHER	Onsite Gaitronics 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"/>		

## PNPS EMERGENCY PLAN

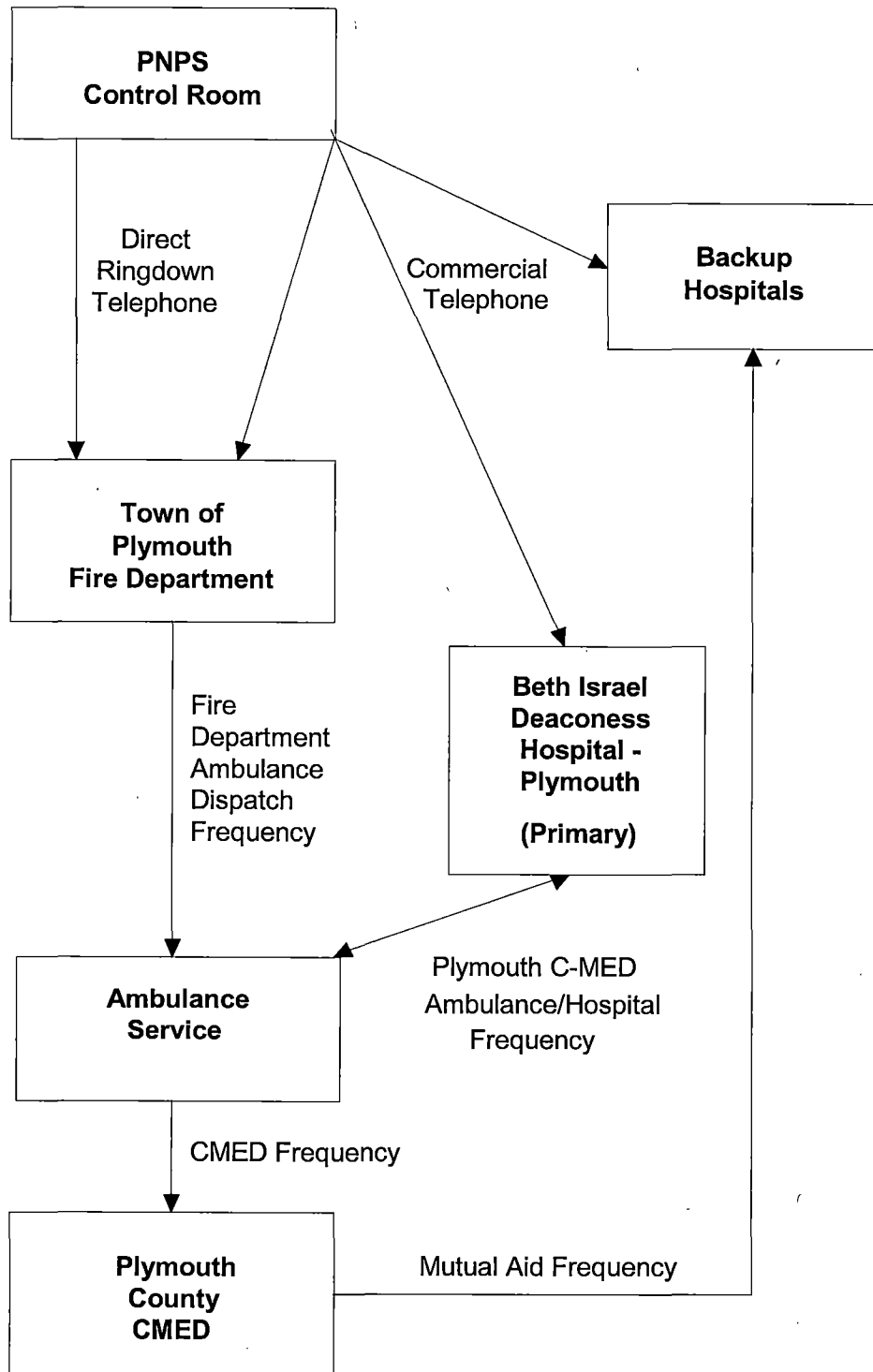
FIGURE F-2: DELETED

### NOTE

The decision process to activate EverBridge is specified in appropriate Emergency Plan Implementing Procedures

# PNPS EMERGENCY PLAN

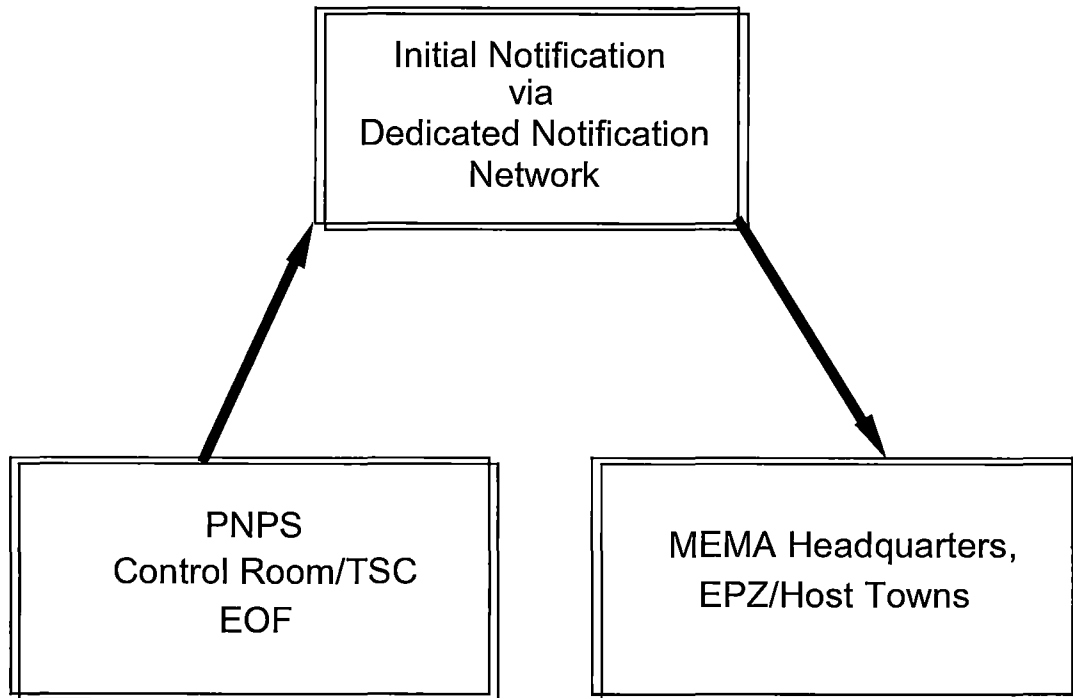
Figure F-3: PNPS - Medical Communications





## 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. **Joint Information Center**
  - a. The Joint Information 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 available for their use. If, due to radiological or other conditions, the Joint Information Center is found to be uninhabitable, it will be relocated to the Alternate Joint Information Center at Bridgewater State University in Bridgewater. Comparable facilities for both the Joint Information Center staff and media representatives are available at the alternate facility.
  - b. During an emergency, the Emergency Director may approve access to the Emergency Operations Facility for a limited number of news media.
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).

## PNPS EMERGENCY PLAN

- b. The Joint Information 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. Reports of misinformation or rumors are forwarded to the JIC Manager and/or Company Spokesperson for an appropriate response by Joint Information 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 Joint Information Center or other emergency response facilities. Reporters receive information about Joint Information 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 ensure 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 CRS. 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 Certified Fuel Handlers and Non-Certified Operators. All plant-related operations are directed from the Control Room and supervised by the CRS. 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.

Additional engineering support may be activated from the Nuclear Engineering Staff. Specific personnel assignments are determined at the time of the emergency by the Emergency Plant Manager and the Operations 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 may include search and rescue, repair and corrective actions, damage assessment/control, onsite/in-plant survey, first aid, and fire fighting to support accident mitigation activities.

The Chiltonville Training Center is an alternative facility, with communication capabilities for contacting the Control Room, plant security and the EOF, which serves as a staging area for augmented emergency response staff if the site is under threat of or experiencing hostile actions.

In the event the TSC/OSC evacuation becomes necessary, the emergency response procedures identify an alternate location for the TSC/OSC.

2. Emergency Operations Facility (EOF): PNPS has established an Emergency Operations Facility (EOF) located at 44 Obery Street across from the Plymouth North High School 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 may be requested to augment access control of the EOF.

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; coordination of corporate support; development of protective action recommendations for the general public; coordination of emergency response activities with Federal, Commonwealth and local agencies; and capability to perform offsite notifications.

The EOF consists of an Operations Room, a Communications 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 in the Town Hall, Carver, MA. and is approximately 10.5 miles west 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. Alternative Facility: The Alternative Facility utilized during a Hostile Action event is located at the Chiltonville Training Center. The facility serves as a staging area for TSC and OSC personnel and is equipped with offsite and onsite communication and engineering assessment activities including damage control team planning and preparation.

## PNPS EMERGENCY PLAN

4. Emergency Operations Centers (EOCs) and Incident Command Post (ICP): 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.

The Town of Plymouth EOC is located in Plymouth, Massachusetts. 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 Region 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 teletypewriter) equipment, maps, emergency plans, and status boards to provide the necessary interfaces with other Commonwealth, local, Federal and PNPS emergency facilities.

The Joint Information Center is located at the Entergy Industrial Park Training Center in Plymouth, approximately 6.5 miles North West of PNPS. The Joint Information Center is staffed by PNPS and government public information representatives who will be the source of public information during an emergency at PNPS. The Joint Information Center is normally activated upon declaration of an Alert or above. If, due to radiological or other conditions, the Joint Information Center is found to be uninhabitable, it will be relocated to the Alternate Joint Information Center at Bridgewater State University in Bridgewater.

The MEMA Region II EOC is located at MEMA Region 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 EOC/Office of Public Safety (OPS) is the primary Commonwealth notification point. Continuous communication coverage is provided by dispatcher on a 24-hour basis.

The Incident Command Post (ICP) is an offsite physical location that administers the on-scene incident command and the other major incident management functions and works under Incident Command System (ICS) strategies. ICS has been summarized as a "first-on-scene" structure, where the first responder of a scene has charge of the scene until the incident has been declared resolved, a superior-ranking responder arrives on scene and seizes command, or the Incident Commander appoints another individual Incident Commander. ICS consists of a standard management hierarchy and procedures for managing temporary incident(s) of any size. Incidents at Pilgrim Station will have an ICP location as determined by the responding offsite Incident Commander.

## PNPS EMERGENCY PLAN

5. Activation: PNPS has put into place plans and procedures to ensure 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 some minimum staffing and one (1) hour for full manning has been established for onsite emergency facilities and the EOF. Plans have been developed to ensure timely functional activation and staffing of the Joint Information Center.
6. 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:
  - 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 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.
  - c. The Control Room and applicable redundant backup locations are equipped with extensive plant process monitors for use in both normal and emergency conditions. 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.

Section I provides more details on the accident assessment efforts that can be used to assess the incident and make determinations on the proper emergency measures to be implemented.

7. 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 Taunton, MA 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 environmental Thermoluminescent Dosimeters (TLDs) (WT-WTPNP-2013-263, CA-05), 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, PNPS has access to outside analytical assistance and laboratory facilities from other non-affected Entergy nuclear sites, Commonwealth and Federal agencies and other utilities through INPO. This support may include but is not limited to the following:

Massachusetts Department of Public Health (MDPH) through the implementation of the Nuclear Incident Advisory Team (NIAT) Handbook has laboratory analysis capability at the Commonwealth/State Contracted laboratories and those laboratories listed in the New England Interstate Radiation Assistance Plan.

The U.S. Department of Energy (DOE) through the implementation of the Federal Radiological Emergency Response Plan (FRERP) or Radiological Assistance Program (RAP) will provide necessary radiological monitoring assistance. The DOE Region Coordinating Office for PNPS is the Brookhaven Area Office located in Upton, New York.

Other environmental monitoring and analysis support can be requested and arranged through INPO. The INPO Emergency Resources Manual includes the information necessary to locate and request specialized equipment and technical assistance in the area of offsite radiological monitoring. INPO member utilities and suppliers agree to provide assistance as outlined in the INPO Emergency Resources Manual.

The above facilities have the capability to perform laboratory analyses of various environmental samples (e.g., terrestrial, marine and air). It is also estimated that the analytical assistance and laboratory support will be able to respond within eight (8) hours from initial notification.

- 8. 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 Advisory 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  $1.0\text{E-}7$   $\mu\text{Ci/cc}$  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.

## PNPS EMERGENCY PLAN

9. 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, to the Emergency Plant Information Computer (220 foot) and to the station's business Local Area Network (160 foot). The 220 foot also reports information to the Control Room.

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.

10. Protective and Damage Control 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  $1.0\text{E-}07 \mu\text{Ci/cc}$ .

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, OSC, JIC and EOF personnel, and is also stored at the Chiltonville staging area.

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.

Portable first-aid kits are available in the Engineering and Support Building 1st Floor entrance closest to Primary Access Point in the Medical Cart, Medical Office in the vestibule Central Alarm Station Building, and Old Executive Building within the Fire Tour personnel 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.



## PNPS EMERGENCY PLAN

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.

11. 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 PNPS Procedures, are submitted to the Emergency Planning Manager for review. The Emergency Planning Manager is responsible for the evaluation of these results and assignment of corrective actions for deficiencies identified, if any.

The Emergency Planning Manager 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 Table H-5 system inoperability, the Emergency Planning Manager will inform the Regulatory and Performance Improvement Director within one business day of the inoperable condition, as well as of compensatory measures taken, if any.

12. General Use Emergency Equipment: Tables H-1, H-2, H-3, and H-4 identify by general category examples of equipment that make up emergency kits used in an emergency situation. Table F-1 shows available communications equipment. PNPS cooperates with local and Commonwealth officials to ensure that sufficient and appropriate emergency kits are made available.
13. 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 ensure the readiness of field monitoring equipment. Instrumentation and equipment utilized for activity determination are routinely calibrated to ensure timely availability.

## PNPS EMERGENCY PLAN

Table H-1: Examples of 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	Portable Radio
Masking Tape	Clipboard
Petri Dishes	SAM-2 Counting System
Portable Generator	
Pocket Knife	

## PNPS EMERGENCY PLAN

Table H-2: Examples of 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: Examples of Medical Equipment

Bandage Shears	Burn Spray
Forceps	Antiseptic Spray
Adhesive Strips	Sterile Burn Sheet
2" Gauze Pads	Multi-Trauma Dressing
Knuckle Bandages	First Aid Triage Pack:
Fingertip Bandages	Major Wound Care:
Antiseptic Wipes	Fracture Care
Triple Antibiotic Ointment Packets	Severe Burns
First Aid/Burn Cream packets	Minor Burns
Rescue Blanket	CPR & Shock
Combine Dressing	Eye Care
First aid tape	Instant Cold Pack
Eye wash	Exam Gloves

## PNPS EMERGENCY PLAN

Table H-4: Examples of 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 Emergency Preparedness Notification

Technical Support Center Diesel Generator

Technical Support Center HVAC System

Pilgrim Station Gaitronics System

Pilgrim Plant 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

- 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 Unified RASCAL Interface (URI) computer program which displays the projected whole body and thyroid exposures to the populace in the plume exposure pathway.

### 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 Process Radiation Monitors.
- 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 Unified RASCAL Interface (URI) computer program.

## PNPS EMERGENCY PLAN

4. Effluent Monitor Data and URI: The correlation between effluent monitor data and onsite and offsite exposure rates is accomplished through use of the Unified RASCAL Interface (URI) computer program. URI is a computer program 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 10-mile Plume and 50-mile Ingestion exposure pathways.
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 site, 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 the station's business Local Area Network. Data from both towers is also available via local readout. The National Weather Service, or other official commercial or governmental meteorological gathering services, are possible alternate sources for obtaining meteorological data.

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.
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 Radiological Assessment Coordinator. Environmental measurements are utilized as an aid in the determination of protective and recovery actions for the general public.
8. Offsite Monitoring Teams (OMTs): Offsite Monitoring Teams 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. OMTs are composed of two individuals, at least one of whom is a qualified Radiation Protection technician.

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

Survey data from OMTs 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: OMTs 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  $1.0\text{E-}7$   $\mu\text{curies}$  per cubic centimeter in the presence of noble gases.

## PNPS EMERGENCY PLAN

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 in coordination with federal and site 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 to protect onsite personnel during hostile action is provided to ensure the continued ability to safely shut down the reactor and perform the functions of the emergency plan. A combination of restricted movement, movement to safe locations and site evacuation may be used depending on the nature of the event and available advance warning. 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, by dispatching a security officer(s) to evacuate those areas.

2. **Evacuation Locations:** If Protected Area evacuation is required, personnel are directed to evacuate to an assembly area. The Engineering and 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.



## PNPS EMERGENCY PLAN

5. Accountability: At the declaration of Site Area Emergency or General 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 TSC Security Coordinator and the results forwarded to the Emergency Plant Manager. For Hostile Action events, accountability may be delayed in lieu of other onsite protective actions required to ensure safety of the site and its personnel. In these cases, accountability will be completed once safe conditions have been established.
6. Provisions for Onsite Personnel: PNPS maintains an inventory of respiratory protection equipment, anti-contamination clothing, and radio protective 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 radiation protection 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 for offsite PNPS emergency workers or by the Emergency Plant Manager for onsite PNPS emergency workers.

## PNPS EMERGENCY PLAN

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" and the NRC/FEMA guidance in Supplement 3 to NUREG-0654/FEMA-REP-1 – "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Guidance for Protective Action Strategies."

Protective action recommendations are made directly to the Commonwealth agencies that 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.

The possible Protective Action Recommendations (PARs) issued by PNPS in accordance with EP-IP-400, *"Protective Action Recommendations"*, at a General Emergency include:

- At a minimum, based on plant conditions, evacuation of the 2 mile ring and 5 miles downwind of the affected EPZ sub-areas along with sheltering of all other EPZ sub-areas will be recommended unless sheltering as an alternative to evacuation is recommended; or
- In event of a short duration emergency radioactive release (i.e., <1 hour for the entire event), or a General Emergency is declared because of Hostile Action, then sheltering instead of evacuation for the affected, land-based EPZ sub-areas will be recommended.

In addition to the plant-condition PARs, off-site dose projections will be used to determine whether plant-condition PARs are adequate. This will include evaluating the off-site dose projection results in accordance with the threshold for dose-based evacuation PARs. Table J-1 summarizes the PNPS PARs for the general public based on projected dose to the population-at-risk.

In all of the above cases, a reminder is provided that Commonwealth and local authorities should consider the administration of Potassium Iodide (KI) for the general public in accordance with their plans and procedures.

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 in the formulation of protective action recommendations using Guidance in NUREG-0654/FEMA-REP-1, Rev.1, Supplement 3, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants". Estimates of EPZ permanent resident population changes are conducted annually.

## PNPS EMERGENCY PLAN

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.
  - b. The population distribution around Pilgrim Nuclear Power Station is presented in the Evacuation Time Estimates, Appendix 5.
  - c. As indicated in Section E, 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.
  - c. 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.
  - d. Provisions for the use of radio protective 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 radio protective drugs to emergency workers and the general public.
  - 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, Evacuation Time Estimates.
  - 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, Evacuation Time Estimates.
  - 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

## PNPS EMERGENCY PLAN

- 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, Evacuation Time Estimates. Estimates of EPZ permanent resident population changes are conducted annually.
  - m. The bases for dose driven protective action recommendations are as follows:
    - If projected doses exceed minimum EPA PAGs, evacuation is considered for affected subareas and sheltering is considered for remaining subareas.
    - 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, security concerns or offsite emergency response capabilities) is usually performed by the Commonwealth.
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:**

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

**THEN:**

No actions are necessary.

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

Evacuate \*

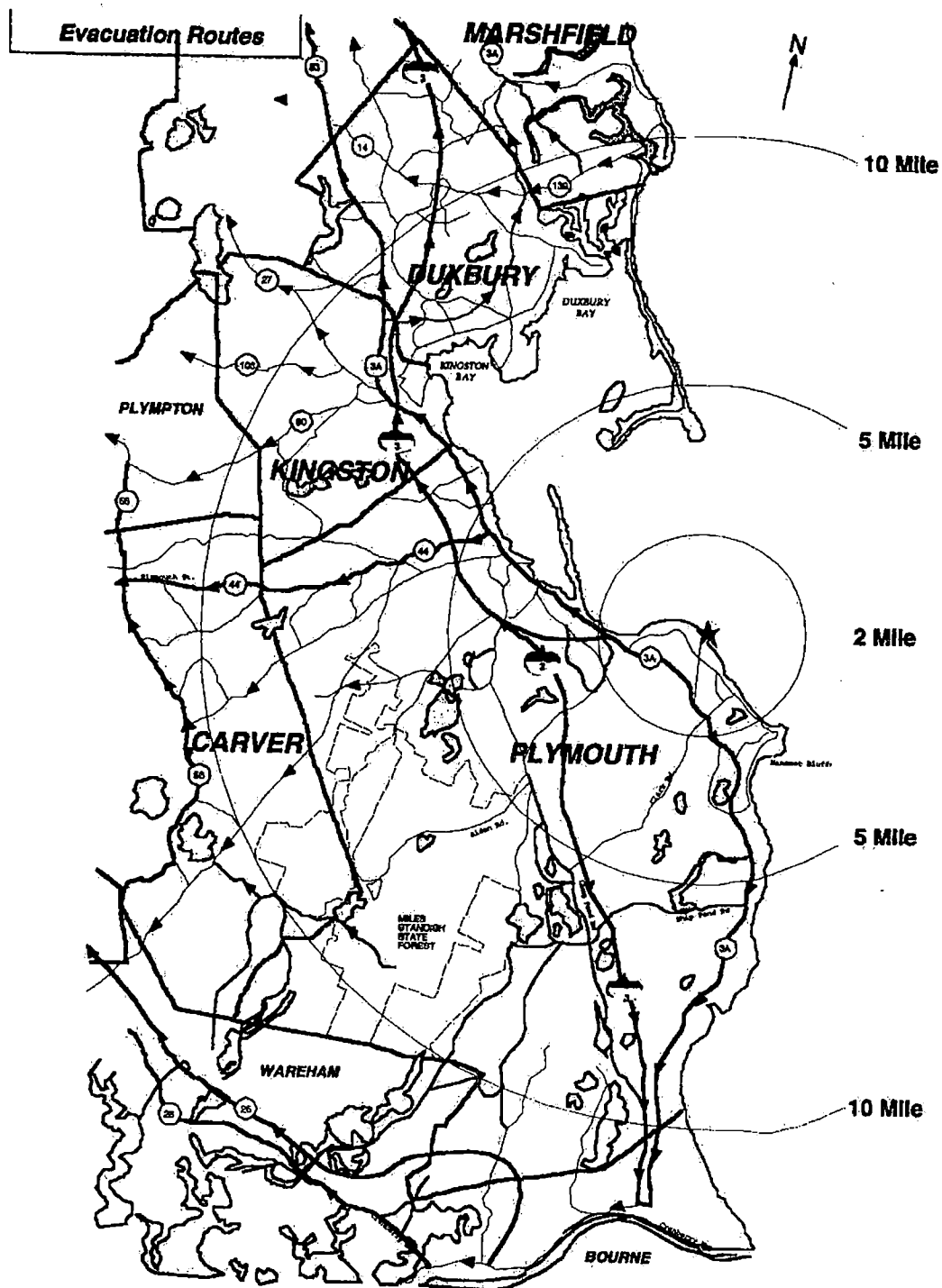
Consider the administration of Potassium Iodide (KI) to the general public †

- \* 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, non-security impediments or offsite emergency response capabilities) is usually performed by the Commonwealth.
- † Consideration of administering Potassium Iodide (KI) to the general public would be recommended by PNPS at the General Emergency classification in accordance with offsite plans and procedures.



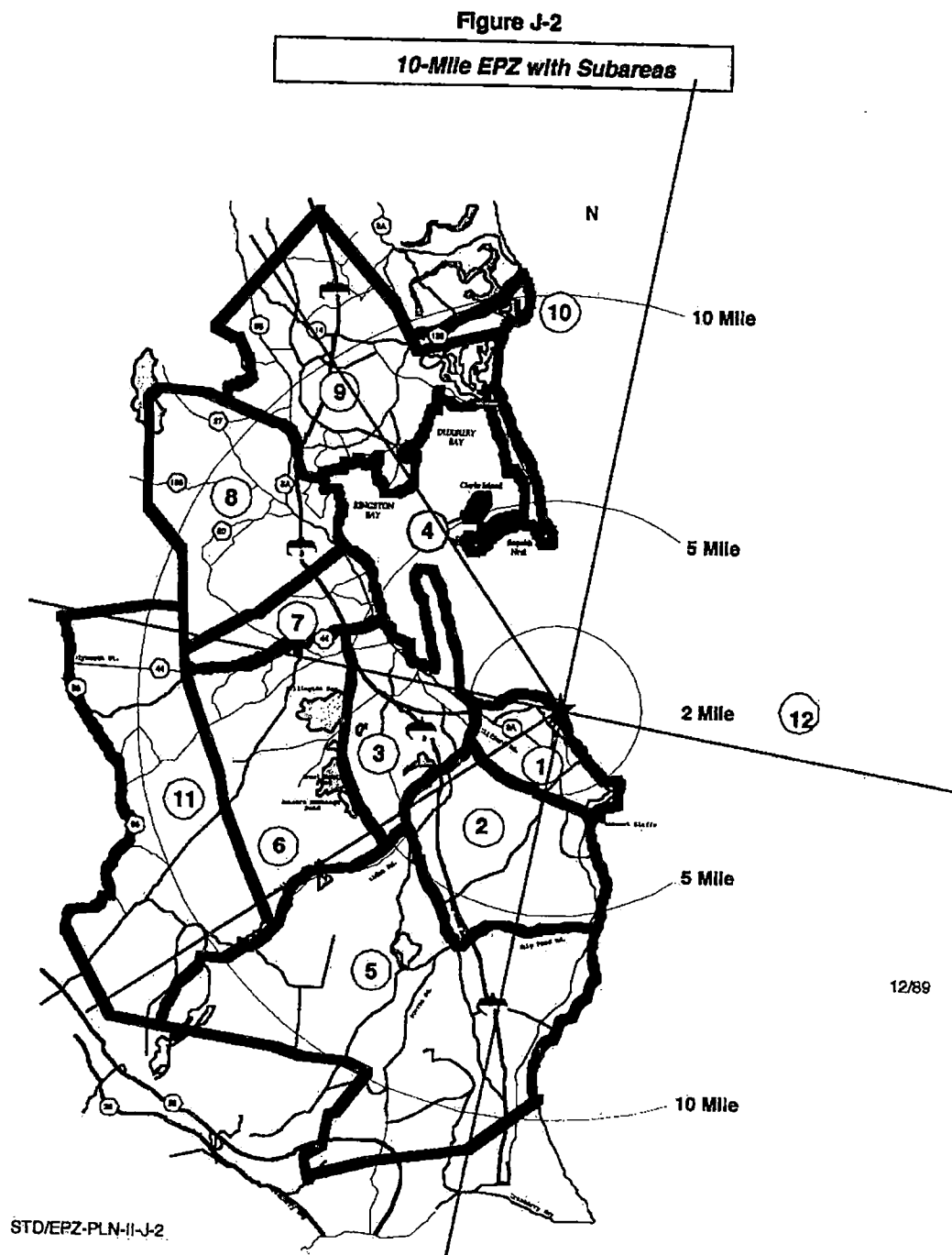
# PNPS EMERGENCY PLAN

Figure J-1: Evacuation Routes



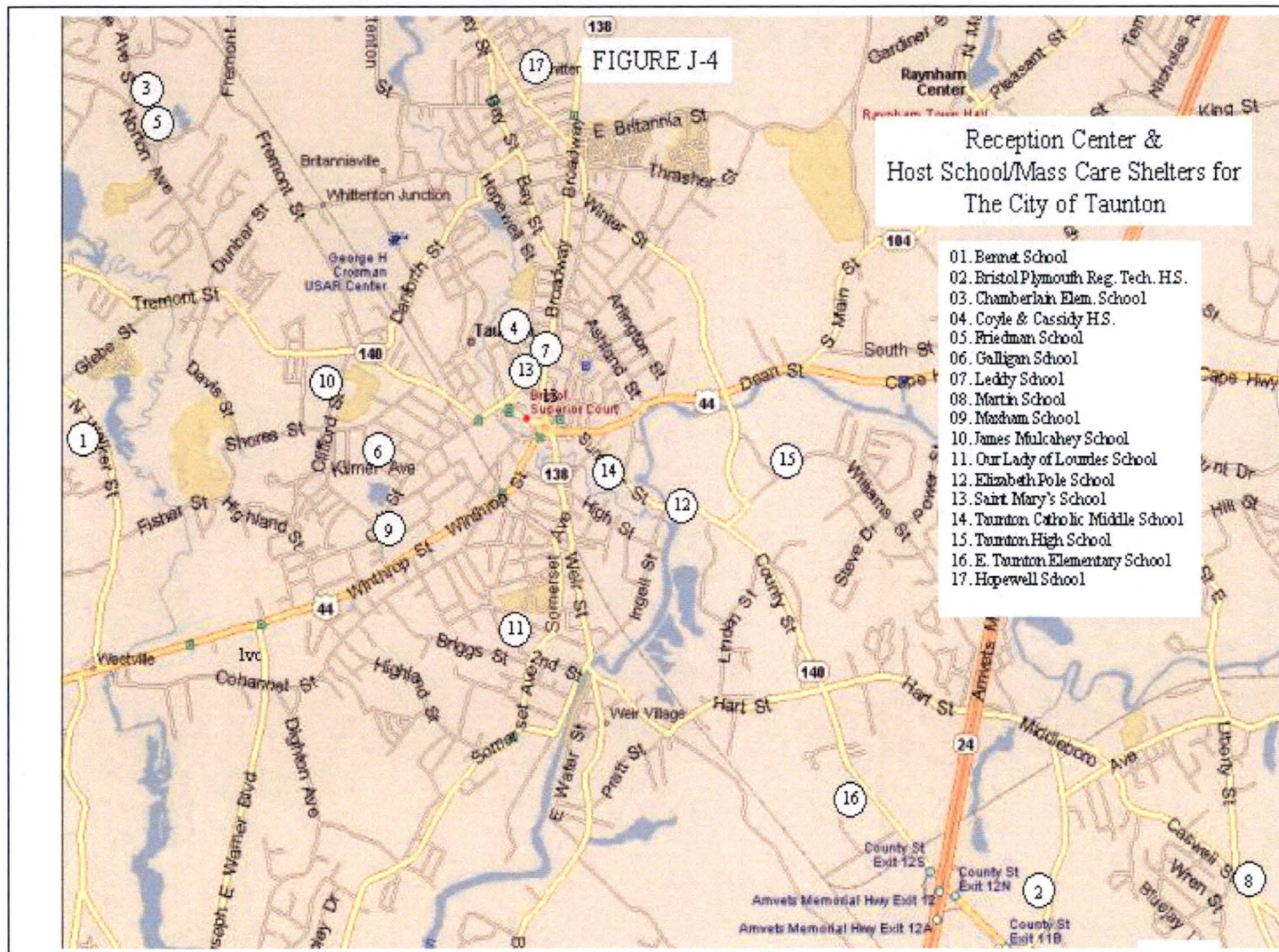
# PNPS EMERGENCY PLAN

Figure J-2: 10-Mile EPZ With Subareas



## PNPS EMERGENCY PLAN

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

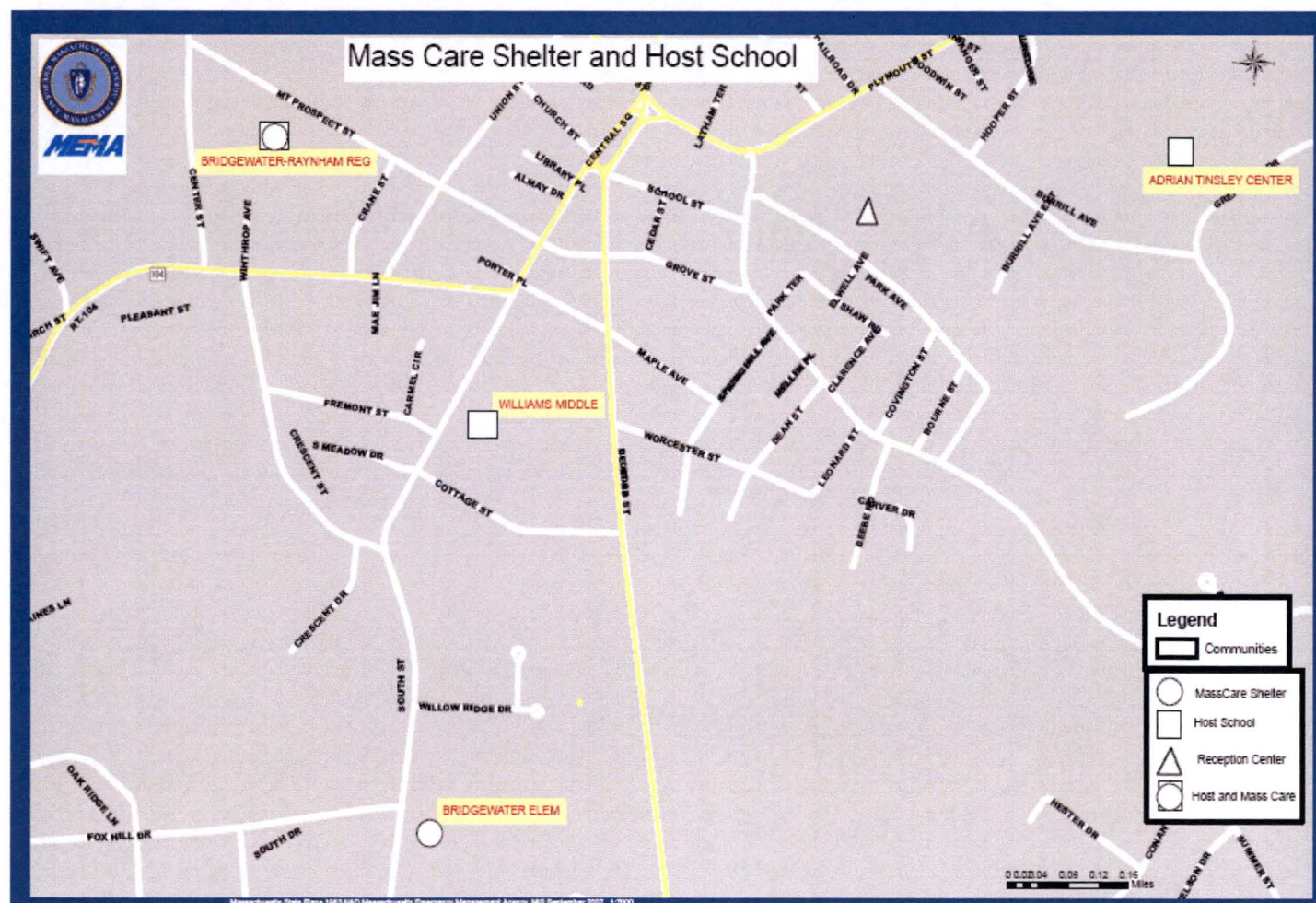


\*Information provided by MEMA, Region II, 8/2011



## PNPS EMERGENCY PLAN

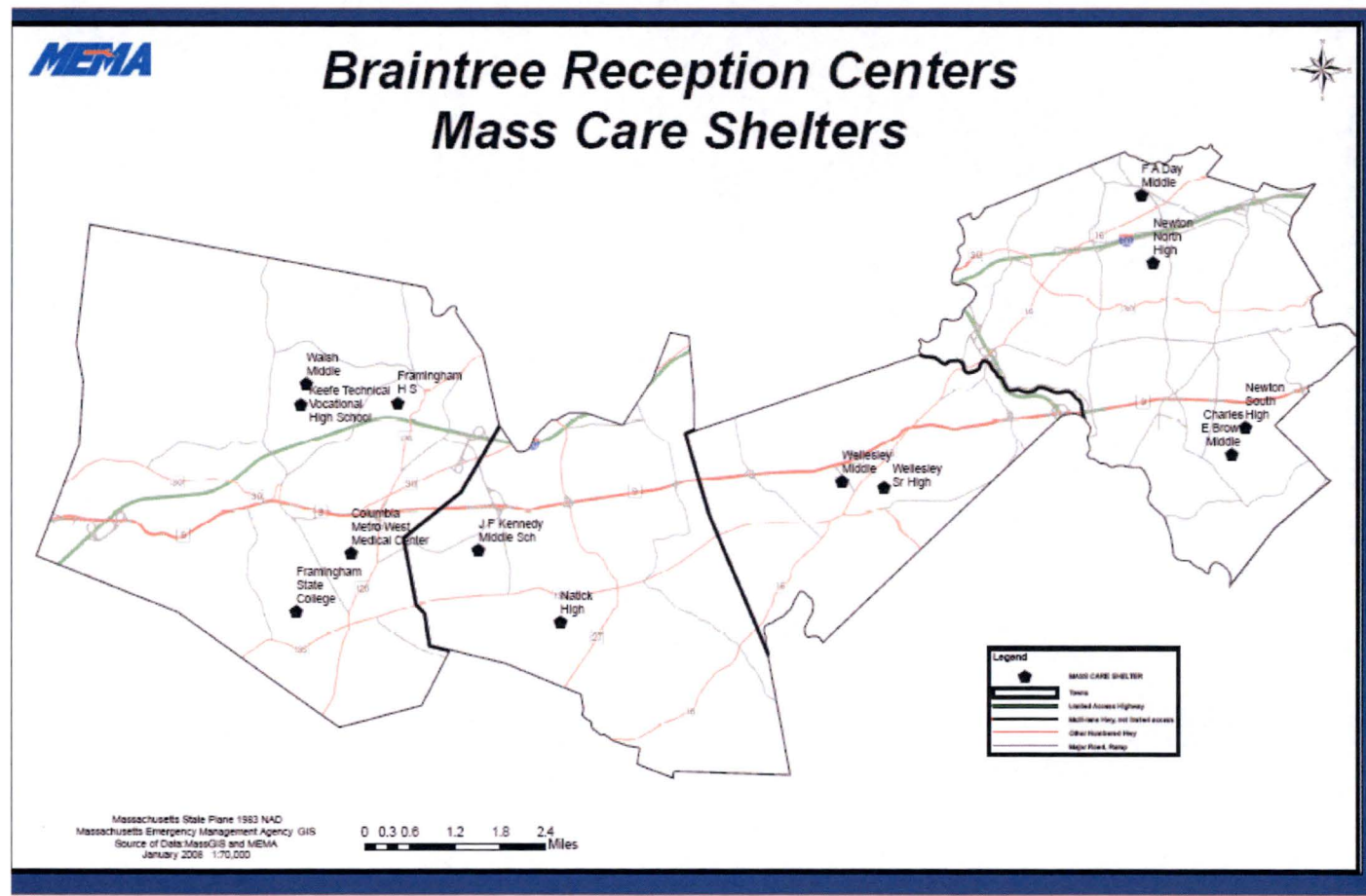
Figure J-4: Reception Center and Host Schools/Mass Care Shelters, Town of Bridgewater



\*Information provided by MEMA, Region II, 8/2011

## PNPS EMERGENCY PLAN

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



\*Information provided by MEMA, Region II, 8/2011



# 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 Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, 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:

<b><u>Dose Limit*</u></b>	<b><u>Activity</u></b>	<b><u>Conditions</u></b>
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 Coordinators 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 general activities limits is held by the Emergency Director for offsite (outside the protected area) ERO personnel through recommendations from the Radiological Assessment Coordinator and the Emergency Plant Manager for onsite ERO personnel through recommendations from the Radiological Coordinator and 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 childbearing 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 Radiological Coordinator or Radiological Assessment Coordinator. Prior to entry into a suspected high radiation area, the individual's current year 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 Dosimeter of Legal Record (DLR) is issued to all emergency response personnel in the protected area. All Level II GET responders wear a DLR every work day; Level I GET responders are provided with a DLR 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 DLRs on a 24-hour per day basis, if necessary, through Entergy company dosimetry service agreements. Emergency workers are instructed to read self-indicating dosimeters frequently, and DLRs 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) and visitors to receive exposures in excess of the EPA General Public Protective Action Guides rests with the Commonwealth and local organizations, except when such emergency workers and visitors are onsite. Authorization of exposures in excess of EPA General Public Protective Action Guides, in this latter instance, rests with the Emergency Plant Manager.

### 5. Decontamination and First Aid

- a. Normal contamination control limits apply in emergency conditions. However, these limits may be modified by the Radiological Coordinator or Radiological Assessment Coordinator should conditions warrant.
- b. Decontamination materials are stored in the Emergency Operations Facility and Assembly Areas. Portable first-aid kits are available in the Engineering and Support Building 1st Floor entrance closest to Primary Access Point in the Medical Cart, Medical Office in the vestibule Central Alarm Station Building, and Old Executive Building within the Fire Tour personnel area. A personnel injury onsite involving possible radioactive contamination is initially treated by an on-shift EMP. 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.

## PNPS EMERGENCY PLAN

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 Beth Israel Deaconess Hospital – Plymouth (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 severe trauma, 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 Radiological Coordinator.
- 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 and drinking 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 and non-PNPS 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: Beth Israel Deaconess Hospital - Plymouth is the primary care facility for treatment of contaminated injured persons, and evaluation of radiation exposure and radionuclide uptake. Beth Israel Deaconess Hospital - Plymouth is located in Plymouth, Massachusetts, and five miles from PNPS.

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

2. Onsite First Aid Capability: Personnel injuries involving possible radioactive contamination are initially treated by an on-shift EMP. Prompt attention is given to life endangering injuries in preference to decontamination. (See Section O, Emergency Response Training, 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, Sample Copies of 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 an 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 Manager, the assigned Team Coordinator and the Radiological Coordinator 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 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.
- 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.
- 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.

## PNPS EMERGENCY PLAN

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 exceeds 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.
  - 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 Executive or a designated alternate is the Recovery Director.

## PNPS EMERGENCY PLAN

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 Operations General 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 Regulatory and Performance Improvement 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 media 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
- Radiation Protection
- Chemistry
- Technical Support
- Engineering Support

## PNPS EMERGENCY PLAN

- 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/Drills**

- a. Exercises are conducted biennially 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 may simulate 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. Scenarios for biennial exercises are submitted to the NRC at least 60 days in advance of the exercise date as required by 10 CFR 50 Appendix E.IV.F.2.a.
- b. Exercises/Drills provide an opportunity to evaluate the ability of participating organizations to implement a coordinated response to postulated emergency conditions. In accordance with the PNPS Eight-Year Drill/Exercise Plan, drills and exercises are conducted to ensure that all major elements of the emergency plan and preparedness program are demonstrated at least once in each eight-year period. At least one drill every eight years is started off-hours. Drills/Exercises are scheduled to be conducted at different times of the year. An unannounced drill is performed twice per eight-year cycle in accordance with the Eight-Year Plan.
- c. Scenario elements to be addressed in the eight-year Drill/Exercise Plan, as described in 10 CFR 50 Appendix E.IV.F.2.j include:
  - Hostile Action directed at the site
  - No/Minimal Radiological Release not requiring protective actions
  - Initial classification or rapid escalation to Site Area Emergency or General Emergency
  - Implementation of strategies developed under 10 CFR 50.54(hh)(2)
  - Integration of offsite resources with onsite response



## PNPS EMERGENCY PLAN

2. Specialized Drills: PNPS conducts specialized drills for the purpose of testing, developing and maintaining the proficiency of emergency responders. The specialized drills may include, but are not limited to the following:

- 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 is tested quarterly.

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

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. Offsite Monitoring Team Drills: Offsite Monitoring Team (OMT) 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.
- 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 EverBridge notification system with responders calling in their anticipated arrival times. The anticipated arrival times are then checked to confirm that the PNPS Emergency Response Organization could have been activated in a reasonable amount of time.
  - Activation of EverBridge, with actual response to Emergency Response Facilities.

## PNPS EMERGENCY PLAN

- g. Combined Functional Drills: Periodically, drills are conducted to test the interfacility coordination, communication, and operation among emergency facilities including the EOF, TSC, OSC, Joint Information Center (JIC), Incident Command Post (ICP) and Entergy Corporate.
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 drills or exercises involving only partial participation by offsite agencies, PNPS conducts a full, self-evaluation of activities; NRC representatives may be requested to observe these drills or exercises. For full participation exercises 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 Regulatory and Performance Improvement 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.

# PNPS EMERGENCY PLAN

## **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 or P-EN-TQ-110, "Emergency Response Organization Training". 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 that 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 that may be called upon to provide onsite assistance in the event of an emergency:
  - Plymouth Fire Department
  - Plymouth Police Department
  - 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.
    - **Walkthrough Sessions:** Consists of a facility walk through to familiarize PNPS Emergency Response Organization personnel with procedures, communications equipment and facility layout. Walkthrough Sessions also provide the opportunity to discuss facility activities, responsibilities and procedures with an instructor.

## PNPS EMERGENCY PLAN

- 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 Emergency Medical Personnel (individuals qualified as EMTs; RNs, First Responders, and Paramedics) are trained to respond to medical emergencies per PNPS procedure 5.5.3, Medical Emergency Response Procedure.
  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. Detailed training matrices are maintained in NTM5.5, Emergency Response Organization Training, and P-EN-TQ-110-01, "EPlan Training Course Summary".

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.

## PNPS EMERGENCY PLAN

### a. Personnel Responsible for Management of an Emergency

Emergency Director, Emergency Plant Manager

These positions receive specialized training in the areas of:

- Notifications
- Emergency Classifications
- Protective Action Recommendations
- Emergency Action Levels
- Emergency Exposure Control

### b. Personnel Responsible for Accident Assessment

Plant Operators (Certified Fuel Handlers/Non-Certified Operators) receive routine classroom training to ensure proficiency in accident assessment.

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:

### c. Offsite 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.

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

- Equipment and Equipment Checks
- Communications
- Plume Tracking Techniques

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



## PNPS EMERGENCY PLAN

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 Dose Assessment
- Protective Action Recommendations
- Offsite 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 receives specialized training in the areas of:

- Interfacing with Outside Support
- Organizational Interface

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 outlined in Parts 1.a and 1.b of this section.

## PNPS EMERGENCY PLAN

- h. Medical Support Personnel: Onsite medical personnel receive specialized training in the handling of contaminated victims and hospital interface.
  - i. 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.
  - j. Corporate Support Personnel: Entergy corporate personnel responsible for responding to requests from Pilgrim Station receive training in accordance with existing corporate emergency response procedures and appropriate elements of the PNPS Emergency Plan and Implementing Procedures.
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
    - 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 or P-EN-TQ-110, "Emergency Response Organization Training". Additionally, PNPS offers initial training to those offsite organizations that 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 Response Organization Training Matrix. 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

## PNPS EMERGENCY PLAN

- 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 Planning 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

# PNPS EMERGENCY PLAN

## **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 Planning Staff**

1. At least once each calendar year all members of the Emergency Planning 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.
  - Other relevant training as determined by the Emergency Planning Manager.
2. **Authority for Emergency Preparedness Effort:** The Senior Nuclear Executive 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. **Regulatory and Performance Improvement Director:** The Nuclear Safety Assurance Director is responsible for the maintenance of the PNPS Emergency Preparedness Program. In maintaining the program, the Regulatory and Performance Improvement 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 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.

## PNPS EMERGENCY PLAN

- Preparation for and conduct of the Station's drill and exercise program, and ensuring the program meets all regulations and guidelines of the NRC.
- 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.
- Emergency Planning staff is 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 Planning staff provides technical assistance to other PNPS organizations in areas of emergency preparedness.
- Adequate PNPS and EP staff support is provided to support Pilgrim and Offsite emergency response plans.

The Regulatory and Performance Improvement Director is assisted in these responsibilities by the following Emergency Planning staff:

- a. The Emergency Planning Manager 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.



## PNPS EMERGENCY PLAN

- 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 Emergency Planning Staff.
  - Coordinating with Corporate Emergency Preparedness senior management and PNPS site senior management with oversight responsibility for Emergency Preparedness to assure sight emergency preparedness and fleet emergency procedures resources, priorities, and performance standards are balanced for best performance.
- b. Emergency Planning staff members are responsible both for maintaining the operational readiness of the station Emergency Preparedness program and the local offsite and related emergency preparedness programs. Emergency Planning staff report to the Emergency Planning Manager.

Operational readiness activities include:

- 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 onsite 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.
- Oversees the construction, maintenance, and surveillance of the local emergency operation centers and reception centers.
- Oversees the maintenance and readiness of Pilgrim Station's emergency communications equipment.
- Oversees the operation and maintenance of Pilgrim Nuclear Power Station's emergency communications equipment.

## **PNPS EMERGENCY PLAN**

- Oversees the operational readiness of PNPS emergency response Facilities (i.e., Emergency Operations Facility (EOF), Operations Support Center (OSC), Technical Support Center (TSC), Joint Information Center (JIC), Alternate Emergency Operations Facility (AEOF), and Alternate Joint Information Center (AJIC).
- Oversees the maintenance of the emergency preparedness activity tracking systems.
- Oversees the development and maintenance of the Emergency Telephone Directory (ETD).
- Oversees the maintenance and readiness of Station Prompt Alert and 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).

Local offsite and related activities include:

- 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.
- Ensures that the Emergency Public Information Program is developed and maintained to achieve consistency and compatibility with the Pilgrim Nuclear Power Station program.
- Oversees offsite emergency preparedness activities and provides 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 Planning Department at meetings and functions.
- Ensures that the Emergency Planning Manager is aware of trends and relationships in community activities and actions.

## PNPS EMERGENCY PLAN

- Coordinates the development and maintenance of corporate emergency response procedures and training materials with the Entergy Corporate.
- Participates in the development and implementation of strategies associated with Offsite Emergency Preparedness programs that are responsive to current emergency preparedness regulations.
- Develops and maintains with the State of Rhode Island Emergency Management Agency Radiological Emergency Plans and Procedures for the Ingestion Pathway.

Emergency Planning Staff Members report to the Emergency Planning Manager and are selected based upon qualifications that meet those outlined in position descriptions maintained in Emergency Planning Department 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 Regulatory and Performance Improvement Director is responsible for determining which recommended changes are incorporated into the Plan.

Minor changes in the Emergency Plan such as a change in wording or set point 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 consideration for an immediate update to the plan.

Revisions to the Plan are reviewed by the Onsite Safety Review Committee (OSRC) and all organizations affected by the change prior to approval, in accordance with administrative procedures.

Changes to the Plan are made without NRC approval only if such changes do not reduce 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 reduce or have a potential to reduce 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.).

## PNPS EMERGENCY PLAN

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
- 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

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. This appendix also provides a cross-referenced listing of PNPS Administrative Procedures to applicable PNPS Emergency Plan sections that help maintain the PNPS Emergency Preparedness Program.

All of these procedures are periodically reviewed and approved in accordance with document control requirements established in PNPS procedures and Entergy Quality Assurance Program Manual.

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 Pilgrim Emergency Plan is independently reviewed as part of the Pilgrim In-plant Audit Program. The review is conducted as part of the Entergy Quality Assurance Program in accordance with 10 CFR 50.54(t). All aspects of emergency preparedness, including exercise documentation, capabilities, procedures and interfaces with Commonwealth, state and local governments are reviewed.
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.

# PNPS EMERGENCY PLAN

## 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. 10CFR72.32, Emergency Plan
5. 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
6. NUREG-0696, Functional Criteria for Emergency Response Facilities
7. EPA-400-B-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents
8. FEMA-Guidance Memorandum, MS-1 "Medical Services"
9. PNPS FSAR
10. PNPS Tech Specs
11. HI-STORM 100 Cask System FSAR
12. Reg. Guide 1.101, "Emergency Planning & Preparedness for Nuclear Power Reactors"
13. Entergy Corporate Emergency Response/Recovery
14. 10CFR50, Appendix R
15. SANDIA 77-1725
16. PNPS Nuclear Training Manual
17. INPO Emergency Resources Manual
18. Nuclear Organization Procedure 88A4, "Assignment of Responsibilities in Support of the PNPS Emergency Preparedness Program"
19. National Response Framework (NRF)
20. Interagency Radiological Assessment Program (IRAP)
21. Entergy Quality Assurance Program Manual
22. PNPS Offsite Dose Calculation Manual (ODCM)
23. USNRC Generic Letter 82-33 dated 12/17/1982
24. ANSI N 18.7 – 1976, American National Standard, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants
25. Federal Register Notice Final Rule, "Consideration of Potassium Iodide in Emergency Plans", Volume 66, Number 13, page 5427, dated January 19, 2001
26. FEMA Guidance Memorandum, "R1-TH-88-19, "Unannounced and Off-hours REP Exercises", dated August 2, 1988



## **PNPS EMERGENCY PLAN**

27. Supplement 3, NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Guidance for Protective Action Strategies" published November 2011
28. Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels", revision 5, dated February 2008.
29. 76FR72560, "Enhancements to Emergency Preparedness Regulations", Federal Register, Volume 76, p. 72560, Washington, DC, November 23, 2011
30. Reg. Guide 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors", November, 2011

# PNPS EMERGENCY PLAN

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

Number	Title	PNPS Emergency Plan Section(s)
EN-EP-313	Offsite Dose Assessment using the Unified RASCAL Interface	I.3, I.4
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-100.1	Emergency Action Levels (EALs)	Table D-1
EP-IP-260, 9.1	Emergency Director	B.2 B.3, B.4, Table B-1
EP-IP-261, 9.1	Emergency Plant Manager	B.5, Table B-1
EP-PI-261, 9.1	Company Spokesperson	B.5
EP-IP-210	Control Room Augmentation	B.5, Table B-1
EP-IP-261	Technical Support Center (TSC) Operations	B.5, Table B-1
EP-IP-225	Severe Accident Management Support	I.1
EP-IP-261,9.15	TSC/OSC Equipment Operation	B.5, Table B-1
EP-IP-262	Operations Support Center (OSC) Operations	B.5, Table B-1
EP-IP-261, 9.5	Radiological Coordinator	B.5, Table B-1
EP-IP-240	Emergency Security Organization Activation and Response	B.5, Table B-1
EP-IP-260, 9.3	Radiological Assessment Coordinator	B.5, Table B-1
EP-IP-260, 9.25, 9.26	Alternate EOF Setup, Directions to AEOF	H.2
EP-IP-260, 9.6	Offsite Communicator	B.5, F.1
EP-IP-260, 9.27	EOF Equipment Operation	B.5, Table B-1
EP-IP-310	Offsite 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-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-520	Transition and Recovery	M.1, M.2, M.3, M.4
EP-PI-XXX	Emergency Public Information Procedure Set	G.3, G.4
PNPS 5.5.3	Medical Emergency Response Procedure	K.5, L.1, L.4

## PNPS EMERGENCY PLAN

### 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 Organization and Responsibilities	P.1, P.2, P.3
EP-AD-122	Maintenance of the Emergency Telephone Directory	P.10
EP-AD-133	Emergency Public Information Program	G-1, G-2
EP-AD-302	Facilities and Equipment Surveillances	E.1, E.2, F.3, H.10
EP-AD-413	Emergency Communications Test	F.3, N.2.a
EP-AD-601	Emergency Action Levels Technical Basis Document	D.1, D.2, I.1, I.4, J.7
EN-AD-01.01	NMM Procedure Writer Manual	P.4
EN-EP-306	Drills and Exercises	N.1.b, N.2.a, N.2.c, N.2.e.1, N.2.e.2
EN-EP-308	Emergency Planning Critiques	N.1.b, N.2.a, N.2.c, N.2.e.1, N.2.e.2
EN-EP-310	Emergency Response Organization Notification System	E.1, E.2
EN-LI-102	Corrective Action Process	N.5
PNPS 8.E.71	Surveillance, Maintenance, and Calibration of 160' Met Tower MeDAP Equipment	H.9
PNPS 8.E.72	Surveillance, Maintenance, and Calibration of 220' Met Tower MeDAP Equipment	H.9
PNPS 8.E.73	Meteorological Tower Inspection Guideline	H.9

# PNPS EMERGENCY PLAN

## Appendix 3: Sample Copies of Letters of Agreements: Beth Israel Deaconess Hospital - Plymouth

### PNPS EMERGENCY PLAN

#### AGREEMENT

The Entergy Nuclear Operations, Inc. (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 Beth Israel Deaconess Hospital-Plymouth, Inc. (the "BID Plymouth"), Plymouth, Massachusetts for the reception and treatment of radiation accident cases. BID Plymouth has agreed to designate a physician to consult on such cases. Cases of radiation exposure or contamination will be brought to BID Plymouth and treated by the physician so designated or other members of BID Plymouth's staff which BID Plymouth has asked to assist in primary or secondary care of the radiation cases.

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

Prior to admitting these patients into BID Plymouth, 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 BID Plymouth will be accompanied by a Company representative who is knowledgeable and trained in radiation protection. These individuals will remain with the patient to assist BID Plymouth in addressing its radiological concerns as long as necessary. Once the patient is admitted for medical treatment and the radiological concerns of BID Plymouth 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 BID Plymouth for care and treatment of simulated contaminated and injured personnel for training and drills, the Company agrees to reimburse BID Plymouth 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.

The Company hereby agrees to indemnify, defend, and hold harmless Beth Israel Deaconess Hospital Plymouth and its members, officers, directors, employees and agents from and against any and all liability, losses, damages, suits, causes of action, proceedings, claims, and expenses (including, without limitation, experts' and

attorneys' fees) arising in connection with or as a result of the provision of services under this Agreement.

Nothing in this Agreement, nor any act of either the Company or BID Plymouth, 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 BID Plymouth, or except as provided above, (2) to create any right on the part of BID Plymouth or any third person with respect to the Company and its property.

Signed this 16 day of June 2014.

Entergy Nuclear Operations, Inc

Beth Israel Deaconess Hospital-  
Plymouth, Inc.

By 

Its Site V.P.

By 

Its President & CEO

# PNPS EMERGENCY PLAN

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

### ENTERGY NUCLEAR OPERATIONS, INC. EXPENSE REIMBURSEMENT AGREEMENT

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

The Company owns and operates 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., AMR 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.

IN WITNESS WHEREOF the undersigned hereunto set their respective hands this 9<sup>th</sup> Day of JULY, 2014.

ENTERGY NUCLEAR OPERATIONS,  
INC.

BY: 

ITS: J.P. PILGRIM STATION

MORTON HOSPITAL AND  
MEDICAL CENTER, INC.

BY: 

ITS: Kim Bassett President



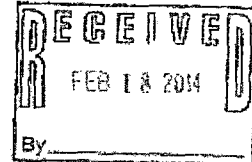
# PNPS EMERGENCY PLAN

## 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



February 14, 2014

Mr. John Dent  
VP Pilgrim, Entergy  
Plymouth, MA 02360

Dear Mr. Dent,

The Plymouth Police Department agrees to respond to the request of the Pilgrim Nuclear Power Station operating personnel or security in the event of an emergency, including those from hostile actions to the site, 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 the evacuation of the public from the site,
3. Provide locations off site for emergency equipment.

The Plymouth Police Department will carry out their emergency duties and exercise their powers granted to them pursuant to the General Laws of the Commonwealth of Massachusetts ("MGL's," specifically MGL 41, Section 98), the Code of Massachusetts Regulations ("CMR's") the Commonwealth of Massachusetts Comprehensive Emergency Management Plan, the Metropolitan Law Enforcement Council ("Metro-LEC"), and the laws of the Town of Plymouth.

This agreement is valid until December 31, 2014

Sincerely,

  
Michael J. Botteri, Chief of Police

Cc Entergy Folder

# PNPS EMERGENCY PLAN

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

**Agreement between the Plymouth Fire Department  
And Entergy Nuclear Generation Company (Entergy Nuclear), or its  
Predecessor Company**

In the event of an incident at the  
Pilgrim Nuclear Power Station (PNPS)

This agreement is valid until December 31, 2014

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

1. Plymouth Fire Department will provide Fire Protection and Suppression Assistance for the Pilgrim Station Site and activate the Plymouth Emergency Operations Center in the event of an emergency including those resulting from hostile actions at the site.
  - a) While providing Fire Protection and Suppression Assistance the senior Plymouth Fire Department Officer on scene and the pilgrim Station Fire Brigade Leader shall remain in continuous communications to co-ordinate the fire fighting, life saving and property protection activities.

In practice this means that Pilgrim Station will defer to Plymouth Fire Department expertise and authority for fire fighting, life saving and property protection activities and Plymouth Fire Department will defer to Pilgrim Station expertise and authority involving reactor plant safety.

- b) Entergy Nuclear and Plymouth Fire realize the need for force readiness training for fire crews and interaction of PNPS personnel and fire crews to ensure safe and efficient operations. To ensure force readiness, Entergy Nuclear shall arrange for and provide funding on an annual basis for;
        1. The Plymouth Fire Department to train and drill on-site with the Station's Fire Brigade;  
Radiological monitoring and instrumentation training for Plymouth Firefighters.
  2. Plymouth Fire Department will carry out their emergency duties and exercise the powers granted to them pursuant to the General Laws of the Commonwealth of Massachusetts (MGL), the Code of Massachusetts Regulations (CMR), the Commonwealth of Massachusetts Comprehensive Emergency Management Plan and the bylaws of the Town of Plymouth.
  3. The Plymouth Fire Department will dispatch crews to Pilgrim Station to provide emergency medical services when requested.
-

## PNPS EMERGENCY PLAN

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

4. The Plymouth Fire Department will provide storage facilities (as such space and facilities are available) for the storage of off-site emergency equipment supplied by Entergy Nuclear and required by Planning Section H, Emergency Facilities and Equipment, of NUREG-0654.

- a) This is intended to include all equipment currently stored (a compressor to fill SCBA bottles). Any additional equipment storage needs will be subject to negotiations between the Plymouth Fire Department and Entergy Nuclear and will be subject to available space that the Department can provide.

Approved Entergy Nuclear  
Pilgrim Nuclear Power Station

Print name John A. Dett  
Signature [Signature]  
Date 6/13/2014

Approved Plymouth Fire

Print name G. Edward Bradley, Fire Chief  
Signature [Signature]  
Date January 13, 2014

# PNPS EMERGENCY PLAN

## Appendix 3: Sample Copies of Letters of Agreements: Town of Carver



## Board of Selectmen

Carver, Massachusetts 02330  
508-866-3400 • Fax 508-866-4213

Richard J. La Fond  
Town Administrator

Jeanne M. Roby  
Administrative Assistant

Jack Alexander  
Director, Nuclear Assessment  
Pilgrim Nuclear Power Station  
600 Rocky Hill Road  
Plymouth, MA 02360

Subject: Letter of Agreement

Dear Mr. Alexander:

The Town of Carver agrees to allow Pilgrim Nuclear Power Station (PNPS) Emergency Response personnel to utilize a conference room in the basement of Carver Town Hall for an Alternate Emergency Operations Facility (AEOF), in case the PNPS primary EOF, located in Plymouth, is declared uninhabitable for any reason. The Town of Carver further agrees to:

1. Allow for storage of PNPS equipment in conjunction with the Carver Emergency Management Agency EOC; and
2. Permit Pilgrim Station Emergency Preparedness Department personnel access to the AEOF equipment for routing maintenance and surveillance; and
3. If necessary, provide Pilgrim Station Emergency preparedness Department personnel off-hour access to activate the AEOF.

This agreement will continue until either the Town of Carver or Pilgrim Nuclear Power Station provides a 60-day written notice that it can no longer support this agreement.

### CARVER BOARD OF SELECTMEN

Frank Maggelli Francis J. Carey  
Bernadette L. Wingard  
Thomas M. Gorman

Date: May 17, 2000

# PNPS EMERGENCY PLAN

## Appendix 3: Sample Copies of Letters of Agreements: Bridgewater State College



July 13, 2000

Mr. Jack Alexander  
Director, Nuclear Assessment  
Pilgrim Nuclear Power Station  
600 Rocky Hill Road  
Plymouth, MA 02360

Subject: Letter of Agreement

Dear Mr. Alexander:

Bridgewater State College agrees to allow Pilgrim Nuclear Power Station (PNPS) Emergency Response personnel to utilize the auditorium and two conference rooms in the John Joseph Moakley Center for an Alternate Media Center (AMC), in the event the PNPS primary Media Center, located in Plymouth, must be relocated during an emergency. Bridgewater State College further agrees to:

1. Allow for the use of existing equipment resources at the facility;
2. If necessary, provide Pilgrim Station Emergency Response personnel off-hours access to activate the Alternate Media Center.

This agreement will continue until either Bridgewater State College or Pilgrim Nuclear Power Station provides a 60-day written notice that it can no longer support this agreement.

Sincerely,

A handwritten signature in dark ink, appearing to read "Miguel Gomes".

Miguel Gomes  
Associate Vice President for Administration & Finance

MG/dln

OFFICE OF ADMINISTRATION & FINANCE • BOYDEN HALL, ROOM 100  
BRIDGEWATER STATE COLLEGE • BRIDGEWATER, MASSACHUSETTS 02325  
(508) 531-1207 • FAX (508) 531-6127



# 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
CB	Citizen Band
cc	cubic centimeter
CERP	Commonwealth of Massachusetts Comprehensive Emergency Response Plan
CFR	Code of Federal Regulations
CHRMS	Containment High Radiation Monitoring System
cm <sup>2</sup>	square centimeter
CR	Control Room
Cs	Cesium
dc	direct current
DLR	Dosimeter of Legal Record
DNN	Dedicated 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
ERON	Emergency Response Organization Notification
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
ICP.....	Incident Command Post
INPO.....	Institute of Nuclear Power Operations
IRAP.....	Interagency Radiological Assistance Program
ISFSI.....	Independent Spent Fuel Storage Installation
JIC.....	Joint Information Center
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
OMT.....	Offsite Monitoring Team
OSC.....	Operations Support Center
OSRC.....	Onsite Safety Review Committee
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
RASCAL.....	Radiological Assessment System for Consequence Analysis
RERP.....	Radiological Emergency Response Plan
SCBA.....	Self-Contained Breathing Apparatus
SGTS.....	Standby Gas Treatment System
SPDS.....	Safety Parameter Display System
Sr.....	Strontium
TTY.....	Teletypewriter
TLD.....	Thermoluminescent Dosimeter
TSC.....	Technical Support Center
μCi.....	microcuries
URI.....	Unified RASCAL Interface

# **PNPS EMERGENCY PLAN**

## **Appendix 5: Evacuation Time Estimates**

THIS APPENDIX IS CONTAINED IN ANOTHER VOLUME  
AND HAS LIMITED DISTRIBUTION

**Attachment 5**

Letter Number 2.18.004

Analysis of Proposed Post-Shutdown On-Shift Staffing

PILGRIM NUCLEAR POWER STATION  
ANALYSIS OF PROPOSED POST-SHUTDOWN  
ON-SHIFT STAFFING

November 2017



# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

## TABLE OF CONTENTS

I.	INTRODUCTION .....	3
II.	ANALYSIS SUMMARY .....	3
A.	Emergency Plan Minimum Staffing.....	5
B.	Other Commitments to Shift Staffing .....	6
C.	Staffing Exceptions and Time Motion Studies.....	6
D.	Emergency Plan Tasks Not Analyzed .....	9
III.	ANALYSIS PROCESS .....	9
IV.	ACCIDENT SCENARIOS .....	10
A.	Accident Selection .....	10
B.	Accident Scenarios included in this Analysis .....	10
C.	Accident Scenarios not included in the Analysis .....	11
V.	GENERAL ASSUMPTIONS AND LIMITATIONS .....	12
A.	Notes and Assumptions applicable to all accidents in PNPS Staffing Analysis: .....	12
B.	Additional Assumptions .....	12
VI.	APPENDIX A - ANALYZED EVENTS AND ACCIDENTS.....	15
VII.	APPENDIX B – ON-SHIFT STAFFING ANALYSIS .....	16
A.	Accident Analysis #1 – Design Basis Threat.....	16
B.	Accident Analysis #2 – Fuel Handling Accident.....	21
C.	Accident Analysis #3 – Aircraft Potential Threat.....	26
D.	Accident Analysis #4 – Control Room Fire Requiring Evacuation and Maintain SFP Cooling .....	31
E.	Accident Analysis #5 –General Emergency with Radioactive Release and PAR .....	36
VIII.	APPENDIX C – TIME MOTION STUDIES SUPPORTING THE STAFFING ANALYSIS .....	41
A.	Multiple Scenarios (Bounding for all Analyses).....	41
IX.	OVERLAP OF TASKS ACTIVITIES OR OTHER CONFLICTS IDENTIFIED .....	44
A.	Overlap Requiring Compensatory Measures .....	44
X.	REFERENCES.....	44

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

## I. INTRODUCTION

On November 10, 2015, Entergy Nuclear Operations, Inc. (ENO) informed the Nuclear Regulatory Commission (NRC) that the Pilgrim Nuclear Power Station (PNPS) will permanently cease power operations no later than June 1, 2019. ENO will supplement the November 10, 2015 letter certifying the cessation date in accordance with Title 10, Code of Federal Regulations (CFR) 50.82(a)(1)(i) and 10 CFR 50.4(b)(9). Once fuel has been permanently removed from the reactor vessel, ENO will submit a written certification to the NRC, in accordance with 10 CFR 50.82(a)(1)(ii) that meets the requirements of 10 CFR 50.4(b)(9). Upon docketing of these certifications, the 10 CFR Part 50 license for PNPS will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel, as specified in 10 CFR 50.82(a)(2). In the permanently defueled condition, the Final Safety Analysis Report (FSAR) credible accidents (postulated accidents) are reduced via the 10 CFR 50.59 process. In order to address the transition from an operating facility to a permanently defueled facility, changes are required to maintain the effectiveness of the Emergency Plan and to properly reflect the conditions of the facility.

This report details the preliminary analysis of the proposed post-shutdown on-shift staffing for PNPS incorporating anticipated changes to the on-shift staffing and postulated accidents to address the post-shutdown and permanently defueled conditions. Specifically, it reassigns some on-shift tasks to align with proposed changes to on-shift staffing and the resulting changes to PNPS Emergency Plan Implementing Procedures (EPIPs). This analysis will be updated and formal Time Motion Studies (TMS) will be conducted, as necessary, following development and validation of procedures that address PNPS's permanently shut down and defueled conditions.

This analysis evaluates the ability of the proposed post-shutdown minimum on-shift staff to implement all emergency tasks as applicable to the post-shutdown and permanently defueled conditions.

This analysis satisfies the requirements of 10 CFR Part 50, Appendix E Section IV.A.9, which states that nuclear power licensees shall perform *"a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan."* To support reduced staffing following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, the proposed post-shutdown on-shift staffing was evaluated in conjunction with the postulated accidents that will be applicable in the permanently defueled condition and assumed corresponding changes to procedures. This analysis examined the capability of the proposed post-shutdown minimum staff to perform the actions for the key functional areas for events applicable in the permanently defueled condition until augmenting Emergency Response Organization (ERO) staff arrives in accordance with the Emergency Plan.

## II. ANALYSIS SUMMARY

This analysis determined that a proposed post-shutdown on-shift staff of eight (8) (including the required Fire Brigade) is able to cope with the spectrum of analyzed events, as described in Section IV of this report, until

## PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

augmenting ERO staff arrives. The on-shift staff consists of individuals necessary to support each of the following emergency plan functional areas or tasks:

- Emergency Direction and Control
- Plant Operations and SFP Cooling
- Fire Fighting (Fire Brigade)
- Accident/Dose Assessment
- Radiation Protection (RP)
- Notification/Communication
- Access Control and Accountability

It is acceptable for certain functions to be assigned to personnel already assigned other functions/tasks. These include Repair and Corrective Action, Rescue Operations, and First Aid.

PNPS intends to enter the post-shutdown and permanently defueled condition with a 5-person Fire Brigade. However, 10 CFR 50.48(f) states, "Licensees that have submitted the certifications required under § 50.82(a)(1) shall maintain a fire protection program to address the potential for fires that could cause the release or spread of radioactive materials (i.e., that could result in a radiological hazard)." 10 CFR 50.48(f)(1)(ii) requires the plant to "rapidly detect, control, and extinguish fires that do occur". The NRC has provided guidance in Regulatory Guide (RG) 1.191, *Fire protection Program for Nuclear Plants During Decommissioning and Permanent Shutdown*. Subsection 4.3.4 Onsite Fire Brigade and Offsite Fire Emergency Response, provides guidance with regards to maintenance of a fire brigade during the post-shutdown period. The following factors should be considered in determining the manual firefighting capability:

- The magnitude and complexity of potential fires in and around plant areas where radioactive materials or contamination are present
- The availability of onsite staffing for a fire brigade at any time.
- The availability of offsite emergency services, the capability of their staff and equipment, the response time, the staff's training, and access to the plant.
- The compatibility of the plant's fire system connections and fittings with the fire apparatus and equipment of the offsite responders.

Considering the guidance in RG 1.191, PNPS could elect to evaluate the possibility of making changes to the fire protection program, considering system abandonments and the reduction of hazards. This analysis could potentially include an evaluation of the feasibility of a smaller fire brigade. However, this analysis of proposed post-shutdown on-shift staffing considers the current 5-person fire brigade.

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

## A. Emergency Plan Minimum Staffing

Per 10 CFR 50.54(q)(1)(iii), *Emergency planning function* means a capability or resource necessary to prepare for and respond to a radiological emergency, as set forth in the elements of section IV of Appendix E and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

Only personnel proposed to be on-shift are credited in this analysis. This proposed staffing consists of a Control Room Supervisor (CRS); two Non-Certified Operators (NCOs); and one RP Technician. An individual qualified as a CFH will supervise fuel handling operations in the permanently shut down and defueled condition. The CRS will be qualified as a CFH. The CRS position requires additional qualification beyond the CFH training. Command and Control will remain with the CRS, regardless of location.

Additionally, four additional Fire Brigade positions and shift Security personnel are assigned. The on-shift staffing utilized for this analysis was defined with the following considerations:

- The CRS performs as Emergency Director until properly relieved by a qualified position. After being relieved by another Command and Control position, the CRS will provide assistance and direction to the Control Room staff as necessary.
- NCO duties include providing technical support for plant systems, providing input on repair and corrective actions, and notifications as directed by the CRS. These notifications include the following: 1) required notifications to the states and local organizations; 2) required notifications to the NRC; and 3) notifications to the ERO. A NCO will also serve as the Fire Brigade Leader in compliance with the PNPS fire protection program implementation with requisite plant knowledge to fill this role.
- NCO duties include making repairs and corrective actions on plant equipment until augmented plant maintenance staff arrives, participating as an active member of the Fire Brigade, or as Fire Brigade Leader when assigned by the CRS.
- Shift RP Technician duties include conducting radiological accident assessment and support, offsite dose assessment, onsite in plant surveys, and chemistry and radiochemistry analysis.
- The proposed Fire Brigade minimum complement is 5, consisting of a NCO (Fire Brigade Leader) and four (4) other Fire Brigade qualified staff members assigned other functions.

The following table contains the proposed post-shutdown on-shift positions expected to be in place following shutdown and permanent removal of fuel from the reactor vessel.

This analysis will be updated and formal TMSs will be conducted, as necessary, following development and validation of procedures that address PNPSs permanently shut down and defueled conditions to verify the proposed post-shutdown on-shift staffing is appropriate.

## PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

Position	Licensing Basis Requirement	E-Plan Functional Area	On-Shift Staffing Analysis Results
Control Room Supervisor (CRS) (Certified Fuel Handler (CFH <sup>1</sup> ))	E-Plan Table B-1	Emergency Direction and Control	1
NCO #1 <sup>1</sup>	E-Plan Table B-1	Notifications/Communications	1
NCO #2 <sup>1</sup>	E-Plan Table B-1	Fire Brigade Leader	1 <sup>3</sup>
Fire Brigade #2 (FB #2)	E-Plan Table B-1	Fire Brigade	1 <sup>3, 4</sup>
Fire Brigade #3 (FB #3)	E-Plan Table B-1	Fire Brigade	1 <sup>3, 4</sup>
Fire Brigade #4 (FB #4)	E-Plan Table B-1	Fire Brigade	1 <sup>3, 4</sup>
Fire Brigade #5 (FB #5)	E-Plan Table B-1	Fire Brigade	1 <sup>3, 4</sup>
RP Technician	E-Plan Table B-1	Radiation Protection Accident/Dose Assessment <sup>2</sup>	1
Security	Security Contingency Plan/E-Plan Table B-1	Access Control and Accountability	Per Security Contingency Plan
<b>TOTAL</b>			<b>8</b>

<sup>1</sup> Use of the titles, CFH and Non-Certified Operator, are consistent with the NRC approved changes to Technical Specifications. Individuals qualified as CFHs will supervise fuel handling operations in the permanently defueled condition. CRSs will be qualified as CFHs. The CRS requires additional qualification beyond the CFH training. NCOs will perform duties typically associated with those formerly performed by Non-Licensed Nuclear Plant Operators, such as manipulation and monitoring of plant equipment.

<sup>2</sup> The RP Technician is assigned Accident/Dose Assessment responsibilities in the Fuel Handling Accident analyses (Analyses #2 and #5). However, the CRS and NCOs are trained and qualified to perform accident/dose assessment and could be perform the task at the direction of the CRS. There are no Accident/Dose Assessment tasks identified as being required during the remaining analyses.

<sup>3</sup> The Fire Brigade consists of a minimum of 5 responders, the Fire Brigade Leader and a minimum of four (4) trained and qualified Fire Brigade Members. These positions do not have any actions or tasks that would conflict with Fire Brigade responsibilities in the events analyzed. The on-shift member is available to support the CRS, where qualified, in non-fire events.

<sup>4</sup> Provided by Fire Brigade qualified staff assigned other functions.

### B. Other Commitments to Shift Staffing

None

### C. Staffing Exceptions and Time Motion Studies

- No chemistry job tasks were noted as being required within the first 90 minutes of any of the analyzed events. Because the Radio Chemistry Technician was not identified as having any specific Chemistry/Radio-Chemistry-related emergency tasks during the scenarios evaluated for this analysis, the Radio Chemistry Technician position is not included in the proposed post-shutdown on-shift staffing complement.
- During fuel movement, additional Operations and RP personnel that are not part of the on-shift staff will be on site that, were a fuel handling accident to occur, will be able to respond to the event. Consequently, there are an adequate number of qualified personnel to perform plant surveys and dose assessment in the event of a fuel handling accident as discussed in Events 2 and 5. The task of accident/dose assessment will be performed as directed by the CRS. It is



## PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

acceptable to assign the RP Technician the emergency plan function of dose assessment. No further analysis or TMS is required.

3. Because PNPS will no longer be authorized to operate the reactor or place fuel into the reactor vessel, the Shift Control Room Engineer position is unnecessary and is not included in the proposed post-shutdown on-shift staffing complement.
4. Because PNPS will no longer be authorized to operate the reactor or place fuel into the reactor vessel, the Safe Shutdown (SSD) task is not necessary and is not considered in this analysis.
5. Because of the reduced actions necessary to mitigate an emergency in the permanently defueled condition and the minimal actions of the Control Room positions in a permanently defueled condition, no Licensed Nuclear Operator job tasks were noted as being required for any of the analyzed events. Because the Licensed Nuclear Operators were not identified as having any specific emergency tasks during the scenarios evaluated for this analysis, the position is not included in the proposed post-shutdown on-shift staffing complement.
6. NCO #1 is assigned the responsibility to make some site-specific event notifications such as to the Duty Plant Manager, Operations Manager, and Resident Inspector. These notifications by phone are considered communications that are approximately one minute in length and are deemed acceptable due to the short duration of the notifications. Additionally, these notifications are collectively evaluated in conjunction with other existing CRS duties and responsibilities during training evaluations and Emergency Plan drills and are not deemed as impacting the CRS's ability to maintain oversight of the event or perform other required emergency plan tasks. Line 14 of Table 5 contained in Section VII of this report does not reflect the performance of these short duration notifications. No further analysis or TMS is required.
7. A TMS was performed to verify the capability of the Non-Certified Operator to perform the Notification/Communication responsibilities assigned in each analysis. The PNP process for completing state and local emergency notification forms and performing the off-site notifications is automated and requires minimal manual actions. A TMS was conducted and demonstrated that these tasks could be performed by the on-shift Non-Certified Operator without impacting the ability of the Non-Certified Operator to remain in role providing support and oversight during the emergency. The TMS demonstrated the Notification/Communication responsibilities could be performed individually or in series without impacting the Non-Certified Operator function. The results are documented in Section VIII of this analysis.

The TMS is considered bounding for all scenarios considered in this analysis and demonstrated the Notification/Communication responsibilities could be performed individually or in series without impacting the NCO function. The results are documented in Section VIII of this analysis.

## PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

8. Station staff are required to maintain continuous communications with the notification source during an aircraft threat in accordance with 10 CFR 50.54(hh) and Reg. Guide 1.214. There are no specific qualifications required to perform this task and the function is not required to be assigned in advance. The analysis of this event identified there are sufficient personnel on-shift to perform this task during the event. No further analysis or TMS is required.
9. The CRS is assigned the task of notifying the off-shift ERO of the emergency. A TMS was conducted during development of the Pilgrim On-Shift Staffing Analysis Report, dated December 20, 2012 to determine if the Shift Manager could perform the concurrent tasks of Safe Shutdown during a Control Room Evacuation and Alternate Shutdown continuing to maintain emergency direction and control. The TMS demonstrated the Shift Manager was able to maintain Emergency Direction and Control during the approximate 6 minutes it took to perform the safe shutdown procedure steps assigned to the Shift Manager. This evaluation demonstrates that the proposed post-shutdown CRS position would be capable of performing the task of notifying the ERO in the permanently shut down and defueled condition while maintaining Emergency Direction and Control. No further analysis or TMS is required.
10. NRC event notifications required due to the declaration of an Emergency Classification in accordance with 10 CFR 50.72 is made verbally using the Emergency Notification System. A written event notification form is not generated by on-shift staff for this notification. Formal written notifications to the NRC as may be required by 10 CFR 50.72 resulting from any of the analyzed events may be generated by the augmented staff. The task of completing the NRC event notification form is therefore not included as an on-shift task requiring evaluation as part of this staffing analysis.

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

## D. Emergency Plan Tasks Not Analyzed

1. Repair and Corrective Action - Per the guidance of NUREG-0654, Table B-1, repair and corrective action tasks may be performed by shift personnel assigned other functions. Repair and corrective action is defined as:

- An action that can be performed promptly to restore a non-functional component to functional status (e.g., resetting a breaker), or to place a component in a desired configuration (e.g., open a valve), and which does not require work planning or implementation of lockout/ tagout controls to complete.

This analysis included a review of repair and corrective action tasks. For the purpose of this analysis, the tasks were considered to fall into two broad categories:

- Unplanned/unexpected actions that address equipment failures. These actions are contingent in nature and cannot be specified in advance.
- Planned/expected actions performed in support of operating procedure implementation, including severe accident management guidelines.

NCOs are trained to perform the actions associated with this functional area. Actions (e.g., reset breakers, valve manipulation) directed by the CRS to mitigate the event per procedures were performed by the NCOs in this analysis. Repair and Corrective Action is an acceptable collateral duty and was not analyzed.

2. Rescue Operations and First Aid: This analysis also included a review of rescue operations and first aid response although neither task was required during the evaluated scenarios. Per the guidance of NUREG-0654, Table B-1, rescue operations and first aid may be performed by shift personnel assigned other functions. Three staff members per shift are trained and assigned to perform first aid duties. The on-shift RP Technician will provide radiation protection oversight. The station fire brigade staff is trained in rescue operations and is available to perform these tasks if required. First aid and rescue operations are acceptable collateral duties.

## III. ANALYSIS PROCESS

The Pilgrim On-Shift Staffing Analysis Report, Rev. 0, dated December 20, 2012, was conducted by a joint team of corporate Emergency Preparedness (EP) personnel and personnel from the Operations, Training, RP, Chemistry and station EP departments. Additionally, members of the Security staff provided input to the analysis. This report was developed based on input, reviews and concurrence from station personnel from the same departments as those participating in the original analysis.

The current analysis was developed by reviewing each scenario from Revision 0 to determine its applicability in a permanent shutdown and defueled condition and what plant actions and emergency plan implementation actions would be required based on plant procedures prior to staff augmentation. These actions were then compared to

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

the proposed post-shutdown on-shift positions expected to be in place following shutdown and permanent removal of fuel from the reactor vessel, ensuring that no actions were assigned to staff members that conflicted with either their proposed emergency plan role or operational role as appropriate. In cases where multiple tasks were assigned to an individual in their role, an evaluation of the timing of the tasks was conducted to ensure that they could be performed by the individual in series within any specified time requirements.

The results of the analysis for each of the scenarios are included in Section VII, APPENDIX B – ON-SHIFT STAFFING ANALYSIS. Note that NSIR DPR-ISG-01 states that only Design Basis Accidents (DBA) “which would result in an emergency declaration” should be evaluated in the staffing assessment. In a permanently shutdown and defueled condition FSAR Chapter 14 will be revised to eliminate the DBAs that will not be applicable in the permanently defueled condition.

## IV. ACCIDENT SCENARIOS

### A. Accident Selection

1. The scenarios were chosen using the guidance in NSIR/DPR-ISG-01, based on the applicability in a permanently shut down and defueled condition. The evaluation considered the station DBAs described in the FSAR along with additional scenarios specified by the guidance documents. The following scenarios were considered for inclusion in this analysis:
  1. Design Basis Threat (DBT) ground assault
  2. DBA Fuel Handling Accident (FHA).
  3. Aircraft Potential Threat as described in 10 CFR 50.54(hh).
  4. Fire requiring evacuation of the Control Room
  5. General Emergency with radioactive release and Protective Action Recommendation (PAR)
  6. Station Blackout (SBO) as described in ISG-01

### B. Accident Scenarios included in this Analysis

1. Design Basis Threat

The event evaluated for this analysis assumes a land based threat that is neutralized immediately when inside the protected area fence, no significant damage to equipment or systems that require corrective actions before the ERO is staffed, no radiological release, and no fire that requires firefighting response before the ERO is staffed.
2. Fuel Handling Accident

The postulated design basis accident that will remain applicable to PNPS in its permanently shut down and defueled condition is the FHA in the Reactor Building where the SFP is located. This

## PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

accident analysis assumes the drop of a spent fuel assembly onto the spent fuel racks within the SFP resulting in breaking the fuel rods.

3. Aircraft Potential Threat (10 CFR 50.54(hh))

Notification is received from the NRC that a potential aircraft threat exists (>5 minutes, <30 minutes).

4. Fire requiring evacuation of the Control Room and control of service water pumps from a remote location

A fire occurs requiring the evacuation of the Control Room and procedures implemented to control service water pumps from a remote location.

5. General Emergency with radioactive release and PAR (assumed for analysis purposes)

This event is based on the same initial conditions as the FHA, but assumes a dose that exceeds the Environmental Protection Agency's Protective Action Guides beyond the site boundary, and thus necessitates promulgation of a PAR.

C. Accident Scenarios not included in the Analysis

1. Station Blackout

ISG-01 provides guidance associated with the staffing analysis for a SBO. ISG-01 states, in part:

*Station blackouts are beyond the plant's design basis and may not need to be addressed in the staffing analysis. The blackout coping analyses performed by licensees pursuant to 10 CFR 50.63 establish blackout coping times that exceed the required on-shift staff augmentation time. Also, since the control room fire scenario leading to evacuation and remote shutdown may adequately address the considerations involved with an Appendix R "safe shutdown" fire, licensees may not need to consider this scenario in the staffing analysis.*

10 CFR 50.63(a)(1) states, in part:

*Each light-water-cooled nuclear power plant licensed to operate under this part, each light-water-cooled nuclear power plant licensed under subpart C of 10 CFR part 52 after the Commission makes the finding under § 52.103(g) of this chapter, and each design for a light-water-cooled nuclear power plant approved under a standard design approval, standard design certification, and manufacturing license under part 52 of this chapter must be able to withstand for a specified duration and recover from a station blackout as defined in § 50.2.*

Upon docketing of the certification of permanent removal of fuel in accordance with 10 CFR 50.82(a)(1)(ii), per 10 CFR 50.82(a)(2) the Part 50 license will no longer authorize operation of the reactor or emplacement of fuel in the reactor vessel. PNPS will no longer be a nuclear power plant licensed to operate under 10 CFR Part 50 and 10 CFR 50.63 will no longer be applicable.



## PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

The SBO scenario is no longer considered an appropriate gauge by which to measure whether an event presents on-shift staff with responsibilities that would prevent the timely performance of assigned functions in the Emergency Plan. Therefore, this scenario is not considered in this analysis.

### 2. Appendix R Fire That Results in a Reactor Trip

10 CFR 50 Appendix R is applicable to licensed nuclear power generating plants. Once the certifications required by 10 CFR 50.82(a)(1) are docketed, PNPS will no longer be licensed to generate power. The Appendix R fire scenario is no longer considered an appropriate gauge by which to measure whether an event presents on-shift staff with responsibilities that would prevent the timely performance of assigned functions in the Emergency Plan. Therefore, this scenario is not considered in this analysis.

## V. GENERAL ASSUMPTIONS AND LIMITATIONS

### A. Notes and Assumptions applicable to all accidents in PNPS Staffing Analysis:

1. The RP and Chemistry tasks reviewed were those directed by the CRS to support actions in Operations procedures for Off-Normal and Emergency conditions, and Emergency Plan procedures and checklists. Any additional tasks directed by the Technical Support Center (TSC), Operations Support Center (OSC), or Emergency Operations Facility (EOF) procedures were not reviewed.
2. The augmentation time for some ERO positions is 30 minutes. This analysis was conducted assuming a 90 minute response of the augmented ERO. No credit was taken for 30-minute responders. Tasks for event response were reviewed for 90 minutes following the declaration. No specific emergency response tasks requiring the augmented ERO were identified during the 90 minutes following the emergency declaration.
3. There are no time critical RP or Chemistry tasks and task performance is directed and prioritized by the CRS. The time RP is directed to perform a task and the amount of time taken to complete tasks are estimated. No Chemistry samples are required by Technical Specifications within the 90 minute period after a declaration. Because the CRS directs when the tasks are performed, there are no overlapping RP or Chemistry tasks.

### B. Additional Assumptions

1. Response time used for this analysis was the maximum acceptable number of minutes elapsed between emergency declaration and the augmented ERO position holder at a location necessary to relieve an on-shift position of the emergency response task.

## PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

2. On-shift personnel complement was based on the proposed post-shutdown on-shift positions expected to be in place following shutdown and permanent removal of fuel from the reactor vessel.
3. Although the temporary absence of a position may be allowed by Technical Specifications, the analysis was performed assuming that all required on-shift positions are filled.
4. Each analyzed event occurred during off-normal work hours where the ERO was offsite and all required minimum on-shift positions were filled.
5. On-shift personnel reported to their assigned response locations within timeframes sufficient to allow for performance of assigned actions.
6. On-shift staff had necessary Radiation Worker qualification to obtain normal dosimetry and enter the radiological control area (but not locked high or very high radiation areas) without the aid of an RP Technician.
7. Personnel assigned plant operations met the requirements and guidance (analyzed through other programs such as operator training) and were not evaluated as part of this assessment unless a role/function/task from another major response area was assigned as a collateral duty.
8. In-plant (manual) safety related operator actions to manipulate components and equipment from locations outside the Control Room to achieve and maintain SFP cooling was done by a member of the on-shift staff as defined in the unit's Technical Specifications.
9. Fire Brigade staff performance is analyzed through other plant programs (e.g., fire drills) and was not evaluated as part of this assessment unless a role/function/task from another major response area was assigned as a collateral duty.
10. Individuals holding the position of RP Technician are qualified to perform the range of tasks expected of their position.
11. Security was not evaluated unless a role or function from another major response area was assigned as a collateral duty.
12. Communications, briefings, and peer checks are acceptable collateral duties.
13. All on-shift staff positions were evaluated, even if they had no known collateral duties, to ensure they can perform the tasks assigned to them. [Ref NSIR/DPR-ISG-01]
14. The Staffing Analysis specified the resources available to perform "Repair and Corrective Actions" and "Rescue Operations and First Aid" but these may be assigned as collateral duty to a designated on-shift responder.

## PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

15. For assessment purposes, NRC notifications were treated as a continuous action per 10CFR50.72(c)(3) and 73.71(b)(1). This means once the initial NRC communications are established, the NRC will request an open line be maintained with the NRC Operations Center.
16. DBA (postulated accident, Condition IV event, or limiting fault) is considered as "Unanticipated occurrences that are postulated for accident analysis purposes but not expected to occur during the life of the plant. A postulated accident could result in sufficient damage to preclude resumption of plant operation. As a result, a greater number and variety of actions would need to be implemented by plant personnel."
17. DBT assumed a hostile force breached the protected area fence but was neutralized with no adverse consequences to plant safety. Damage inflicted on plant systems, structures and components was not sufficient to interrupt SFP cooling or cause a radiological release. There was no fire significant enough to warrant firefighting efforts prior to arrival of offsite resources and/or the augmented ERO.
18. The analysis used DBA analysis assumptions, inputs, timing of events, plant protective response, and specified manual operator actions and their timing, as documented in the FSAR.
19. In cases where a DBA analysis included a radiological release, and the starting point of the release was not clearly defined, the staffing analysis assumed that the release began 15-minutes after the initiating event.

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

## VI. APPENDIX A - ANALYZED EVENTS AND ACCIDENTS

Event #	Event Type	Summary Description of Event	Plant Mode <sup>1</sup>	Reference Document(s)	Event ECL	Analysis Required?
1	DBT	Land and/or waterborne HOSTILE ACTION directed against the Protected Area by a HOSTILE FORCE. Assume adversary characteristics defined by the Design Basis Threat (DBT).	Permanently Defueled	NEI 10-05	Site Area Emergency	Yes
2	DBA	Fuel Handling Accident	Permanently Defueled	UFSAR Chapter 14 (as revised to address permanently defueled conditions)	Alert	Yes
3	Assumed for Analysis Purposes	Aircraft Potential Threat	Permanently Defueled	10CFR50.54hh(1) RG 1.214	Alert	Yes
4	Assumed for Analysis Purposes	Control Room Evacuation and maintain SFP cooling	Permanently Defueled	10 CFR Part 50.48	Alert	Yes
5	Assumed for Analysis Purposes	General Emergency with radiological release and PAR	Permanently Defueled	ISG IV.C	General Emergency	Yes
6	Assumed for Analysis Purposes	Station Blackout	Permanently Defueled	10CFR50.63	Site Area Emergency	No <sup>2</sup>
7	Assumed for Analysis Purposes	Appendix R Fire	Permanently Defueled	ISG IV.C	Alert	No <sup>3</sup>

<sup>1</sup> Once PNPS submits the certification of permanent removal of fuel in accordance with 10 CFR 50.82(a)(1)(ii), per 10 CFR 50.82(a)(2) the 10 CFR Part 50 license will no longer authorize operation of the reactor or emplacement of fuel in the reactor vessel. PNPS will no longer be a nuclear power plant licensed to operate under Part 50.

<sup>2</sup> Once PNPS submits the certification of permanent removal of fuel in accordance with 10 CFR 50.82(a)(1)(ii), per 10 CFR 50.82(a)(2) the 10 CFR Part 50 license will no longer authorize operation of the reactor or emplacement of fuel in the reactor vessel and 10 CFR 50.63 will no longer be applicable.

<sup>3</sup> Upon Termination of License as prescribed under 10 CFR 50.82 PNPS's Fire Protection program will fall under 10 CFR 50.48 (f) which requires the maintenance of a fire protection program to address the potential for fires that could result in the release or spread of radioactive materials.

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

## VII. APPENDIX B – ON-SHIFT STAFFING ANALYSIS

### A. Accident Analysis #1 – Design Basis Threat

#### 1. Accident Summary

- Land and/or waterborne HOSTILE ACTION directed against the Protected Area by a HOSTILE FORCE. Assume adversary characteristics defined by the DBT. Security Code Red condition.

#### 2. Accident Specific Assumptions Made

- This event assumes the threat is neutralized immediately when inside the protected area fence, no significant damage to equipment or systems that require corrective actions before the ERO is staffed, no radiological release, and no fire that requires firefighting response before the ERO is staffed.
- Assume Spent Fuel Pool Temperature of 125°F.
- Security notifies the CRS of condition of hostile action occurring within the protected area (Security code RED).
- Assume all non-security staff is located inside the protected area at their normal work station when the event occurs.
- Assume all systems function and the spent fuel remains covered. No fuel damage and no release.

#### 3. Procedures for Accident Response

- Procedure 5.3.14, Security Incident
- EP-IP-1 00, Classification and Notifications
- EP-IP-100.1, Emergency Action Levels
- EP-IP-410, Evacuation and Assembly



# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

## 4. Tables

PNPS TABLE 1 – ON-SHIFT POSITIONS Analysis # 1 DBT Security Threat						
Line #	On-shift Position	E-Plan Reference	Augmentation Elapsed Time (min)*	Role in Table # / Line #	Unanalyzed Task?	TMS Required?
1	CRS	Emergency Plan Table B-1	60	T2/L1 T5/L1 T5/L3 T5/L5 T5/L6	No	Yes <sup>1</sup>
2	NCO #1	Emergency Plan Table B-1	N/A	T2/L2 T5/L7* T5/ L8 T5/L9 T5/L10 T5/L13	No	Yes <sup>2</sup>
3	NCO #2	Emergency Plan Table B-1	N/A	N/A	No	No
4	FB #2	Emergency Plan Table B-1	N/A	N/A	No	No
5	FB #3	Emergency Plan Table B-1	N/A	N/A	No	No
6	FB #4	Emergency Plan Table B-1	N/A	N/A	No	No
7	FB #5	Emergency Plan Table B-1	N/A	N/A	No	No
8	RP Technician	Emergency Plan Table B-1	60	N/A	No	No
--	Security	Security Contingency Plan / Emergency Plan Table B-1	N/A	T5/L15	No	No

<sup>1</sup> The CRS is assigned the responsibility to make ERO notifications. A TMS was conducted during development of the December 2012 OSA and demonstrated that the Shift Manager was able to maintain Emergency Direction and Control during the approximate 6 minutes it took to perform Safe Shutdown actions. This evaluation demonstrates that the CRS would be capable of performing the task of notifying the ERO in the permanently shut down and defueled condition while maintaining Emergency Direction and Control. No further analysis or TMS is required to verify timely and effective implementation.

<sup>2</sup> See Section VIII.A.

\* Expected duration of less than 1 minute. Therefore, Task not included in the TMS included in Section VIII.A.

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

<b>PNPS TABLE 2 – PLANT OPERATIONS</b> <b>One Unit – One Control Room</b> <b>ANALYSIS # 1 DBT Security Threat</b> Minimum Operations Crew Necessary to Implement AOPs and EOPs if Applicable			
Line #	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
1	Shift Manager	CRS	Licensed Operator Training Program
2	Unit Supervisor	NCO #1	Licensed Operator Training Program

Other (non-Operations) Personnel Necessary to Implement AOPs and EOPs if Applicable

Line #	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
3	Mechanic	N/A	N/A
4	Electrician	N/A	N/A
5	I&C Technician	N/A	N/A
6	Other	N/A	N/A
7	Other	N/A	N/A

Fire Brigade

<b>PNPS TABLE 3 – FIREFIGHTING</b> <b>ANALYSIS # 1 DBT Security Threat</b>		
Line #	Performed by	Task Analysis Controlling Method
1	N/A	N/A
2	N/A	N/A
3	N/A	N/A
4	N/A	N/A
5	N/A	N/A

This accident does not include the need for firefighting, first aid or search & rescue.

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

**PNPS TABLE 4 – RADIATION PROTECTION AND CHEMISTRY**  
**Analysis # 1 DBT Security Threat**

PNPS TABLE 4 – RADIATION PROTECTION AND CHEMISTRY Analysis # 1 DBT Security Threat																			
LINE	Position Performing Function / Task	Performance Time Period After Emergency Declaration (minutes)																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1	In-Plant Survey: <u>N/A</u>																		
2	On-site Survey: <u>N/A</u>																		
3	Personnel Monitoring: <u>N/A</u>																		
4	Job Coverage: <u>N/A</u>																		
5	Offsite Rad Assessment: <u>N/A</u>																		
6	Other site-specific RP (describe): <u>N/A</u>																		
7	Chemistry Function task #1 (describe) <u>N/A</u>																		
8	Chemistry Function task #2 (describe) <u>N/A</u>																		

No Chemistry or RP job function tasks for the conditions described in the DBT assumptions. RP takes cover as directed.

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

<b>PNPS TABLE 5 – EMERGENCY PLAN IMPLEMENTATION</b> <b>Analysis # 1 DBT Security Threat</b>			
<b>Line#</b>	<b>Function / Task</b>	<b>On-Shift Position</b>	<b>Task Analysis Controlling Method</b>
1	Declare the emergency classification level (ECL)	CRS	Emergency Planning Training Program / EP Drills
2	Approve Offsite Protective Action Recommendations	N/A	N/A
3	Approve content of State/local notifications	CRS	Emergency Planning Training Program
4	Approve extension to allowable dose	N/A	N/A
5	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	CRS	Licensed Operator Training Program / Emergency Planning Training Program
6	ERO notification	CRS	Emergency Planning Training Program
7	Abbreviated NRC notification for DBT event	NCO #1	Licensed Operator Training Program
8	Complete State/local notification form	NCO #1	Emergency Planning Training Program
9	Perform State/local notifications	NCO #1	Emergency Planning Training Program
10	Complete NRC event notification form	NCO #1	Emergency Planning Training Program
11	Activate ERDS*	N/A	N/A
12	Offsite radiological assessment	N/A	N/A
13	Perform NRC notifications	NCO #1	Licensed Operator Training Program
14	Perform other site-specific event notifications (e.g., Duty Plant Manager, INPO, ANI, etc.)	N/A	N/A
15	Personnel Accountability	Security	Security Training Program / EP Drills

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

## **B. Accident Analysis #2 – Fuel Handling Accident**

1. Accident Summary
  - The FHA assumes the drop of a spent fuel assembly onto the spent fuel racks within the SFP resulting in breaking the fuel rods.
2. Accident Specific Assumptions Made
  - This analysis assumes an ALERT declaration based on area radiation monitors reaching levels to prompt an emergency declaration.
  - Additional plant personnel, including Operations, Chemistry, and RP Technician, would be on-site during fuel assembly movement. The presence of additional plant personnel would free the on-shift RP Technician to perform dose assessment.
3. Procedures for Accident Response
  - 5.4.3, Refueling Floor High Radiation
  - EP-IP-100, Classification and Notifications
  - EP-IP-100.1, Emergency Action Levels
  - EP-IP-300, Offsite Radiological Dose Assessment



# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

## 4. Tables

PNPS TABLE 1 – ON-SHIFT POSITIONS Analysis #2 – Fuel Handling Accident						
Line #	On-shift Position	E-Plan Reference	Augmentation Elapsed Time (min)	Role in Table # / Line #	Unanalyzed Task?	TMS Required?
1	CRS	Emergency Plan Table B-1	60	T2/L1 T5/L1 T5/L3 T5/L5 T5/L6	No	Yes <sup>1</sup>
2	NCO #1	Emergency Plan Table B-1	N/A	T2/L2 T5/L8 T5/L9 T5/L13	No	Yes <sup>2</sup>
3	NCO #2	Emergency Plan Table B-1	N/A	N/A	No	No
4	FB #2	Emergency Plan Table B-1	N/A	N/A	No	No
5	FB #3	Emergency Plan Table B-1	N/A	N/A	No	No
6	FB #4	Emergency Plan Table B-1	N/A	N/A	No	No
7	FB #5	Emergency Plan Table B-1	N/A	N/A	No	No
8	RP Technician	Emergency Plan Table B-1	60	T4/L2 T5/L12	No	Yes <sup>3</sup>
--	Security	Security Contingency Plan / Emergency Plan Table B-1	N/A	T5/L15	No	No

<sup>1</sup> The CRS is assigned the responsibility to make ERO notifications. A TMS was conducted during development of the December 2012 OSA and demonstrated that the Shift Manager was able to maintain Emergency Direction and Control during the approximate 6 minutes it took to perform Safe Shutdown actions. This evaluation demonstrates that the CRS would be capable of performing the task of notifying the ERO in the permanently shut down and defueled condition while maintaining Emergency Direction and Control. No further analysis or TMS is required to verify timely and effective implementation.

<sup>2</sup> See bounding analysis in Section VIII.A.

<sup>3</sup> See Section II.C.2 for the exception taken for the RP Technician to perform dose assessment. No Time Motion Study or corrective action required.

## PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

<b>PNPS TABLE 2 – PLANT OPERATIONS</b> <b>One Unit – One Control Room</b> <b>ANALYSIS # 2 – Fuel Handling Accident</b>			
Minimum Operations Crew Necessary to Implement AOPs and EOPs if Applicable			
<b>Line #</b>	<b>Generic Title/Role</b>	<b>On-Shift Position</b>	<b>Task Analysis Controlling Method</b>
1	Shift Manager	CRS	Licensed Operator Training Program
2	Unit Supervisor	NCO #1	Licensed Operator Training Program

Other (non-Operations) Personnel Necessary to Implement AOPs and EOPs if Applicable

<b>Line #</b>	<b>Generic Title/Role</b>	<b>On-Shift Position</b>	<b>Task Analysis Controlling Method</b>
3	Mechanic	N/A	N/A
4	Electrician	N/A	N/A
5	I&C Technician	N/A	N/A
6	Other	N/A	N/A
7	Other	N/A	N/A

Fire Brigade

<b>PNPS TABLE 3 – FIREFIGHTING</b> <b>ANALYSIS # 2 – Fuel Handling Accident</b>		
<b>Line #</b>	<b>Performed by</b>	<b>Task Analysis Controlling Method</b>
1	N/A	N/A
2	N/A	N/A
3	N/A	N/A
4	N/A	N/A
5	N/A	N/A

This accident does not include the need for firefighting, first aid or search & rescue.

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

**PNPS TABLE 4 – RADIATION PROTECTION AND CHEMISTRY  
Analysis #2 – Fuel Handling Accident**

LINE	Position Performing Function / Task	Performance Time Period After Emergency Declaration (minutes)*																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1	In-Plant Survey: <u>N/A</u>																		
2	On-site Survey: RP						X	X	X	X	X	X	X	X	X	X	X	X	X
3	Personnel Monitoring: N/A																		
4	Job Coverage: N/A																		
5	Offsite Rad Assessment: <i>(Included in Table 5)</i>																		
6	Other site-specific RP (describe): N/A																		
7	Chemistry Function task #1 (describe) N/A																		
8	Chemistry Function task #2 (describe) N/A																		

The on-shift RP Technician will perform the above task as directed by the CRS. Tasks are not time critical. The on-shift RP Technician is available for dose assessment if a release occurs.

\* The time to commence and complete the task is estimated.

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

<b>PNPS TABLE 5 – EMERGENCY PLAN IMPLEMENTATION</b> <b>Analysis #2 – Fuel Handling Accident</b>			
<b>Line #</b>	<b>Function / Task</b>	<b>On-Shift Position</b>	<b>Task Analysis Controlling Method</b>
1	Declare the emergency classification level (ECL)	CRS	Emergency Planning Training Program / EP Drills
2	Approve Offsite Protective Action Recommendations	N/A	N/A
3	Approve content of State/local notifications	CRS	Emergency Planning Training Program
4	Approve extension to allowable dose	N/A	N/A
5	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	CRS	Licensed Operator Training Program / Emergency Planning Training Program
6	ERO notification	CRS	Emergency Planning Training Program
7	Abbreviated NRC notification for DBT event	N/A	N/A
8	Complete State/local notification form	NCO #1	Emergency Planning Training Program
9	Perform State/local notifications	NCO #1	Emergency Planning Training Program
10	Complete NRC event notification form	N/A	Emergency Planning Training Program
11	Activate ERDS*	N/A	N/A
12	Offsite radiological assessment	RP Technician	Emergency Planning Training Program
13	Perform NRC notifications	NCO #1	Licensed Operator Training Program
14	Perform other site-specific event notifications (e.g., Duty Plant Manager, INPO, ANI, etc.)	N/A	N/A
15	Personnel Accountability	Security Officer	Security Training Program

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

## C. Accident Analysis #3 – Aircraft Potential Threat

### 1. Accident Summary

- The analysis includes all emergency response actions taken prior to an aircraft impact in accordance with RG 1.214 for an aircraft threat that is greater than 5 minutes, but less than 30 minutes from the site, and considers the dispersal of the site fire brigade away from target areas for firefighting..
- The analysis does not include a scenario or response actions taken during or after a crash.

### 2. Accident Specific Assumptions Made

- The CRS receives the call from the NRC of potential aircraft threat.
- All non-security on-shift personnel are inside the protected area fence at their normal workstation.

### 3. Procedures for Accident Response

- 5.3.14.1, Airborne Threat
- EP-IP-100, Classification and Notifications
- EP-IP-100.1, Emergency Action Levels
- EP-IP-410, Evacuation and Assembly
- Procedure 5.3.14, Security Incident

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

## 4. Tables

PNPS TABLE 1 – ON-SHIFT POSITIONS Analysis #3 – Aircraft Potential Threat						
Line #	On-shift Position	E-Plan Reference	Augmentation Elapsed Time (min)	Role in Table # / Line #	Unanalyzed Task?	TMS Required?
1	CRS	Emergency Plan Table B-1	60	T2/L1 T5/L1 T5/L3 T5/L5 T5/L6	No	No <sup>1</sup>
2	NCO #1	Emergency Plan Table B-1	N/A	T2/L2 T5/L9 T5/L13	No	Yes <sup>2</sup>
3	NCO #2	Emergency Plan Table B-1	N/A	N/A	No	No
4	FB #2	Emergency Plan Table B-1	N/A	N/A	No	No
5	FB #3	Emergency Plan Table B-1	N/A	N/A	No	No
6	FB #4	Emergency Plan Table B-1	N/A	N/A	No	No
7	FB #5	Emergency Plan Table B-1	N/A	N/A	No	No
8	RP Technician	Emergency Plan Table B-1	60	N/A	No	No
--	Security	Security Contingency Plan / Emergency Plan Table B-1	N/A	T5/L15	No	No

<sup>1</sup> The CRS is assigned the responsibility to make ERO notifications. A TMS was conducted during development of the December 2012 OSA and demonstrated that the Shift Manager was able to maintain Emergency Direction and Control during the approximate 6 minutes it took to perform Safe Shutdown actions. This evaluation demonstrates that the CRS would be capable of performing the task of notifying the ERO in the permanently shut down and defueled condition while maintaining Emergency Direction and Control. No further analysis or TMS is required to verify timely and effective implementation.

<sup>2</sup> See bounding analysis in Section VIII.A.



# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

<b>PNPS TABLE 2 – PLANT OPERATIONS &amp; SAFE SHUTDOWN</b> <b>One Unit – One Control Room</b> <b>Analysis #3 – Aircraft Potential Threat</b>			
Minimum Operations Crew Necessary to Implement AOPs and EOPs if Applicable			
Line #	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
1	Shift Manager	CRS	Licensed Operator Training Program
2	Unit Supervisor	NCO #1	Licensed Operator Training Program

Other (non-Operations) Personnel Necessary to Implement AOPs and EOPs if Applicable

Line #	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
3	Mechanic	N/A	N/A
4	Electrician	N/A	N/A
5	I&C Technician	N/A	N/A
6	Other	N/A	N/A
7	Other	N/A	N/A

Fire Brigade

<b>PNPS TABLE 3 – FIREFIGHTING</b> <b>Analysis #3 – Aircraft Probable Threat</b>		
Line #	Performed by	Task Analysis Controlling Method
1	N/A	N/A
2	N/A	N/A
3	N/A	N/A
4	N/A	N/A
5	N/A	N/A

This accident does not include the need for firefighting, first aid or search & rescue. The Fire Brigade relocates outside the PA and stands by.

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

**PNPS TABLE 4 – RADIATION PROTECTION AND CHEMISTRY  
Analysis #3 – Aircraft Potential Threat**

PNPS TABLE 4 – RADIATION PROTECTION AND CHEMISTRY Analysis #3 – Aircraft Potential Threat																			
L I N E	Position Performing Function / Task	Performance Time Period After Emergency Declaration (minutes)*																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1	In-Plant Survey: N/A																		
2	On-site Survey: N/A																		
3	Personnel Monitoring: N/A																		
4	Job Coverage: N/A																		
5	Offsite Rad Assessment: <i>(Included in Table 5 – N/A</i>																		
6	Other site-specific RP (describe): N/A**																		
7	Chemistry Function task #1 (describe) – N/A																		
8	Chemistry Function task #2 (describe) – N/A																		

\* Times are estimated.

\*\* The RP Technician has no assigned tasks in response to this event and would be available, if needed, to maintain continuous communications with the NRC during the event.

## PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

<b>PNPS TABLE 5 – EMERGENCY PLAN IMPLEMENTATION</b> <b>Analysis #3 – Aircraft Potential Threat</b>			
<b>Line #</b>	<b>Function / Task*</b>	<b>On-Shift Position</b>	<b>Task Analysis Controlling Method</b>
1	Declare the emergency classification level (ECL)	CRS	Emergency Planning Training Program / EP Drills
2	Approve Offsite Protective Action Recommendations	N/A	N/A
3	Approve content of State/local notifications	CRS	Emergency Planning Training Program
4	Approve extension to allowable dose	N/A	N/A
5	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	CRS	Licensed Operator Training Program / Emergency Planning Training Program
6	ERO notification	CRS	Emergency Planning Training Program
7	Abbreviated NRC notification for DBT event	N/A	N/A
8	Complete State/local notification form	N/A	Emergency Planning Training Program
9	Perform State/local notifications	NCO #1	Emergency Planning Training Program
10	Complete NRC event notification form	N/A	Emergency Planning Training Program
11	Activate ERDS*	N/A	N/A
12	Offsite radiological assessment	N/A	N/A
13	Perform NRC notifications	NCO #1	Licensed Operator Training Program
14	Perform other site-specific event notifications (e.g., Duty Plant Manager, INPO, ANI, etc.)	N/A	N/A
15	Personnel Accountability	Security	Security Training Program

## PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

### **D. Accident Analysis #4 – Control Room Fire Requiring Evacuation and Maintain SFP Cooling**

#### **1. Accident Summary**

- This event involves a large transient fire requiring evacuation of the Control Room. The event has the potential to include shorts and/or spurious signals producing potential to lose SFP cooling capabilities.

#### **2. Accident Specific Assumptions Made**

- Assumed Control Room staff does not have time to perform any procedural actions other than declare the Alert and make the plant announcement before leaving the control room.

#### **3. Procedures for Accident Response**

- EP-IP-100, Classification and Notifications
- EP-IP-100.1, Emergency Action Levels

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

## 4. Tables

PNPS TABLE 1 – ON-SHIFT POSITIONS Analysis #4 – CR Evacuation & SFP Cooling						
Line #	On-shift Position	E-Plan Reference	Augmentation Elapsed Time (min)	Role in Table # / Line #	Unanalyzed Task?	TMS Required?
1	CRS	Emergency Plan Table b-1	60	T2/L1 T5/L1 T5/L3 T5/L5 T5/L6	No	No <sup>1</sup>
2	NCO #1	Emergency Plan Table B-1	N/A	T2/L2 T5/L8 T5/L9 T5/L10 T5/L13	No	Yes <sup>2</sup>
3	NCO #2	Emergency Plan Table B-1	N/A	T3/L1	No	No
4	FB #2	Emergency Plan Table B-1	N/A	T3/L2	No	No
5	FB #3	Emergency Plan Table B-1	N/A	T3/L3	No	No
6	FB #4	Emergency Plan Table B-1	N/A	T3/L4	No	No
7	FB #5	Emergency Plan Table B-1	N/A	T3/L5	No	No
8	RP Technician	Emergency Plan Table B-1	60	N/A	No	No
--	Security	Security Contingency Plan / Emergency Plan Table B-1	N/A	N/A	No	No

<sup>1</sup> The CRS is assigned the responsibility to make ERO notifications. A TMS was conducted during development of the December 2012 OSA and demonstrated that the Shift Manager was able to maintain Emergency Direction and Control during the approximate 6 minutes it took to perform Safe Shutdown actions. This evaluation demonstrates that the CRS would be capable of performing the task of notifying the ERO in the permanently shut down and defueled condition while maintaining Emergency Direction and Control. No further analysis or TMS is required to verify timely and effective implementation.

<sup>2</sup> See bounding analysis in Section VIII.A.

## PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

<b>PNPS TABLE 2 – PLANT OPERATIONS</b> <b>One Unit – One Control Room</b> <b>Analysis #4 – CR Evacuation &amp; SFP Cooling</b>			
Minimum Operations Crew Necessary to Implement AOPs and EOPs if Applicable			
Line #	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
1	Shift Manager	SM	Licensed Operator Training Program
2	Unit Supervisor	CRS	Licensed Operator Training Program

Other (non-Operations) Personnel Necessary to Implement AOPs and EOPs if Applicable

Line #	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
3	Mechanic	N/A	N/A
4	Electrician	N/A	N/A
5	I&C Technician	N/A	N/A
6	Other	N/A	N/A
7	Other	N/A	N/A

Fire Brigade

<b>PNPS TABLE 3 – FIREFIGHTING</b> <b>Analysis #4 – CR Evacuation &amp; SFP Cooling</b>		
Line #	Performed by	Task Analysis Controlling Method
1	Non-Certified Operator	Fire Protection Program
2	FB #2	Fire Protection Program
3	FB #3	Fire Protection Program
4	FB#4	Fire Protection Program
5	FB#5	Fire Protection Program



# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

**PNPS TABLE 4 – RADIATION PROTECTION AND CHEMISTRY  
Analysis #4 – CR Evacuation & SFP Cooling**

LINE	Position Performing Function / Task	Performance Time Period After Emergency Declaration (minutes)*																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1	In-Plant Survey: N/A																		
2	On-site Survey: N/A																		
3	Personnel Monitoring: N/A																		
4	Job Coverage: N/A																		
5	Offsite Rad Assessment: <i>(Included in Table 5)</i>																		
6	Other site-specific RP (describe): N/A																		
7	Chemistry Function task #1 (describe) – N/A																		
8	Chemistry Function task #2 (describe) – N/A																		

No specific time critical tasks were identified for RP or Chemistry for this event.

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

<b>PNPS TABLE 5 – EMERGENCY PLAN IMPLEMENTATION</b> <b>Analysis #4 – CR Evacuation &amp; SFP Cooling</b>			
<b>Line #</b>	<b>Function / Task*</b>	<b>On-Shift Position</b>	<b>Task Analysis Controlling Method</b>
1	Declare the emergency classification level (ECL)	CRS	Emergency Planning Training Program / EP Drills
2	Approve Offsite Protective Action Recommendations	N/A	N/A
3	Approve content of State/local notifications	CRS	Emergency Planning Training Program
4	Approve extension to allowable dose	N/A	N/A
5	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	CRS	Licensed Operator Training Program / Emergency Planning Training Program
6	ERO notification	CRS	Emergency Planning Training Program
7	Abbreviated NRC notification for DBT event	N/A	N/A
8	Complete State/local notification form	NCO #1	Emergency Planning Training Program
9	Perform State/local notifications	NCO #1	Emergency Planning Training Program
10	Complete NRC event notification form	NCO #1	Licensed Operator Training Program
11	Activate ERDS*	N/A	N/A
12	Offsite radiological assessment	N/A	N/A
13	Perform NRC notifications	NCO #1	Licensed Operator Training Program
14	Perform other site-specific event notifications (e.g., Duty Plant Manager, INPO, ANI, etc.)	N/A	N/A
15	Personnel Accountability	N/A	N/A

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

## E. Accident Analysis #5 –General Emergency with Radioactive Release and PAR

1. Accident Summary (Assumed for Staffing Analysis Purpose)
  - The FHA assumes the drop of a spent fuel assembly onto the spent fuel racks within the SFP resulting in breaking the fuel rods.
  - A General Emergency is declared when the CRS is given a dose assessment update that projects >1 Rem TEDE dose at the site boundary.
2. Accident Specific Assumptions Made
  - The FSAR does not contain detailed radiological conditions or release rates to determine an EAL classification. This analysis, therefore, assumed a General Emergency declaration based on area radiation monitors reaching levels to prompt an emergency declaration.
  - Additional plant personnel, including Operations, Chemistry, and RP Technician, would be on-site during fuel assembly movement. The presence of additional plant personnel would free the on-shift RP Technician to perform dose assessment.
3. Procedures for Accident Response
  - EP-IP-100, Emergency Classification and Notification
  - EP-IP-100.1, Emergency Action Levels
  - EP-IP-300, Offsite Radiological Dose Assessment
  - EP-IP-400, PAR

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

## 4. Tables

PNPS TABLE 1 – ON-SHIFT POSITIONS Analysis #5 –GE with PAR						
Line #	On-shift Position	E-Plan Reference	Augmentation Elapsed Time (min)	Role in Table # / Line #	Unanalyzed Task?	TMS Required?
1	CRS	Emergency Plan Table B-1	60	T2/L1 T5/L1 T5/L2 T5/L3 T5/L4 T5/L5 T5/L6	No	Yes <sup>1</sup>
2	NCO #1	Emergency Plan Table B-1	N/A	T2/L2 T5/L8 T5/L9 T5/L12 T5/L13	No	Yes <sup>2</sup>
3	NCO #2	Emergency Plan Table B-1	N/A	N/A	No	No
4	FB #2	Emergency Plan Table B-1	N/A	N/A	No	No
5	FB #3	Emergency Plan Table B-1	N/A	N/A	No	No
6	FB #4	Emergency Plan Table B-1	N/A	N/A	No	No
7	FB #5	Emergency Plan Table B-1	N/A	N/A	No	No
8	RP Technician	Emergency Plan Table B-1	60	T4/L4 T5/L12	No	Yes <sup>3</sup>
--	Security	Security Contingency Plan / Emergency Plan Table B-1	N/A	T5/L15	No	No

<sup>1</sup> The CRS is assigned the responsibility to make ERO notifications. A TMS was conducted during development of the December 2012 OSA and demonstrated that the Shift Manager was able to maintain Emergency Direction and Control during the approximate 6 minutes it took to perform Safe Shutdown actions. This evaluation demonstrates that the CRS would be capable of performing the task of notifying the ERO in the permanently shut down and defueled condition while maintaining Emergency Direction and Control. No further analysis or TMS is required to verify timely and effective implementation.

<sup>2</sup> See Section VIII.A.

<sup>3</sup> See Section II.C.2 for the exception taken for the RP Specialist to perform dose assessment. No Time Motion Study or corrective action required.

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

<b>PNPS TABLE 2 – PLANT OPERATIONS &amp; SAFE SHUTDOWN</b> <b>One Unit – One Control Room</b> <b>Analysis #5 – GE with PAR</b>			
Minimum Operations Crew Necessary to Implement AOPs and EOPs if Applicable			
Line #	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
1	Shift Manager	CRS	Licensed Operator Training Program
2	Unit Supervisor	NCO #1	Licensed Operator Training Program

Other (non-Operations) Personnel Necessary to Implement AOPs and EOPs if Applicable

Line #	Generic Title/Role	On-Shift Position	Task Analysis Controlling Method
5	Mechanic	N/A	N/A
6	Electrician	N/A	N/A
7	I&C Technician	N/A	N/A
8	Other	N/A	N/A
9	Other	N/A	N/A

Fire Brigade

<b>PNPS TABLE 3 – FIREFIGHTING</b> <b>Analysis #5 – GE with PAR</b>		
Line #	Performed by	Task Analysis Controlling Method
1	N/A	N/A
2	N/A	N/A
3	N/A	N/A
4	N/A	N/A
5	N/A	N/A

This accident does not include the need for firefighting, first aid or search & rescue.

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

**PNPS TABLE 4 – RADIATION PROTECTION AND CHEMISTRY**  
**Analysis #5 – GE with PAR**

LINE	Position Performing Function / Task	Performance Time Period After Emergency Declaration (minutes)*																	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
1	In-Plant Survey: RP																		
2	On-site Survey: RP																		
3	Personnel Monitoring: N/A																		
4	Job Coverage: As directed by the SM				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	Offsite Rad Assessment: <u>See Table 5</u>																		
6	Other site-specific RP (describe): N/A																		
7	Chemistry Function task #1 (describe) N/A																		
8	Chemistry Function task #2 (describe) N/A																		

The on-shift RP Technician will perform the above task as directed by the CRS. Tasks are not time critical. The on-shift RP Technician is available for dose assessment if a release occurs.

\* Times indicated above are estimated.



# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

<b>PNPS TABLE 5 – EMERGENCY PLAN IMPLEMENTATION</b> <b>Analysis #5 – GE with PAR</b>			
Line #	Function / Task*	On-Shift Position	Task Analysis Controlling Method
1	Declare the emergency classification level (ECL)	CRS	Emergency Planning Training Program / EP Drills
2	Approve Offsite Protective Action Recommendations	CRS	Emergency Planning Training Program
3	Approve content of State/local notifications	CRS	Emergency Planning Training Program
4	Approve extension to allowable dose	CRS	Emergency Planning Training Program
5	Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)	CRS	Licensed Operator Training Program / Emergency Planning Training Program
6	ERO notification	CRS	Emergency Planning Training Program
7	Abbreviated NRC notification for DBT event	N/A	N/A
8	Complete State/local notification form	NCO #1	Emergency Planning Training Program
9	Perform State/local notifications	NCO #1	Emergency Planning Training Program
10	Complete NRC event notification form	N/A	Licensed Operator Training Program
11	Activate ERDS*	N/A	N/A
12	Offsite radiological assessment	RP Technician	Emergency Planning Training Program
13	Perform NRC notifications	NCO #1	Licensed Operator Training Program
14	Perform other site-specific event notifications (e.g., Duty Plant Manager, INPO, ANI, etc.)	N/A	N/A
15	Personnel Accountability	Security	Security Training Program

**VIII. APPENDIX C – TIME MOTION STUDIES SUPPORTING THE STAFFING ANALYSIS**

**A. Multiple Scenarios (Bounding for all Analyses)**

**TIME MOTION STUDY OF OVERLAPPING TASKS**

**Multiple Scenarios**

**TASK 1: Complete the State/Local Notification  
JOB: NCO #1**

**TASK 2: Perform NRC Notification  
JOB: NCO #1**

**TASK 3: Perform Event Mitigation  
JOB: NCO #1**

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

## PURPOSE:

Perform a Time Motion Study to evaluate whether the performance of actions assigned to the NCO is an acceptable task overlap to the primary emergency plan function of event mitigation.

The analysis is considered bounding for all events.

## NOTE:

Times for the activities performed are based on operating experience (e.g., drills, real events, etc.) and/or informed judgment with consideration given to the limited actions in a permanently shutdown and defueled condition. Validation of actual times will be performed with updated procedures.

## CONCLUSION:

The Time Motion Study demonstrated the NCO could perform the tasks of completing State, local and NRC notifications and performing initial dose assessment successfully without impacting the ability of the NCO to remain in role providing support and oversight during the emergency.

## LOCATION:

The response to this event was determined by conducting a discussion of the event with the applicable department personnel.

## REQUIRED TOOLS/EQUIPMENT:

- a. Procedure 5.3.14, Security Incident
- b. EP-IP-100, Classification and Notifications
- c. EP-IP-100.1, Emergency Action Levels
- d. EP-IP-410, Evacuation and Assembly

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

## Function / Responsibility (Task) Analysis Template

Event: # 5

Site: Pilgrim

Position: Non-Certified Operator

Line #: 8, 9, 10, 13

Function	Responsibility (Task)	Action Step	Duration
1. Off-Site Notification	1.1 Complete the off-site notifications.	1.1.1 Retrieve procedure EP-IP-100, <i>Emergency Classification and Notifications</i> .	1 min
		1.1.2 Enter Required Information	8 min
		1.1.3 CRS approval of notification form.	Performed by CRS
		1.1.4 Perform initial emergency notifications.	2 min
		<b>TASK duration to complete State and Local Notifications</b>	11 min
2. NRC Notification	2.1 Complete NRC event notification form.	2.1.1 Prepare Event Notification Worksheet	Performed by CRS
		2.1.2 Complete the NRC Notification Worksheet immediately after state notifications and not later than one hour after the declaration of an emergency.	1 min
		2.1.3 Perform NRC Notification	2 min
		<b>TASK duration to complete NRC notification</b>	3 min
3. Event Mitigation	3.1 Assess and respond to plant conditions	3.1.1 Provide assistance to the CRS in mitigating the event as directed.	Ongoing
		<b>TASK duration for event mitigation</b>	Ongoing
		<b>TOTAL DURATION</b>	14 min

Task Performer: Paul Smith/ 

Position: Operations Support

Date: 11/17

Evaluator: Stanley Paul/ 

Position: Senior Reactor Operator

Date: 11/17

# PNPS ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

---

## IX. OVERLAP OF TASKS ACTIVITIES OR OTHER CONFLICTS IDENTIFIED

### A. Overlap Requiring Compensatory Measures

None

## X. REFERENCES

- Letter, Entergy Nuclear Operations, Inc. to USNRC, "Notification of Permanent Cessation of Power Operations," PNPS Letter 2.15.080, dated November 10, 2015
- NSIR DPR-ISG-01, *Interim Staff Guidance – Emergency Planning for Nuclear Power Plants*
- NUREG-0654, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.*
- PNPS Emergency Plan, Rev 50
- Pilgrim Nuclear Plant On-Shift Staffing Analysis Final Report, Rev. 0, December 20, 2012.

**Attachment 6**

Letter Number 2.18.004

Emergency Response Organization Task Analysis



Attachment 6 - ERO TASK ANALYSIS

Current ERO Position	EN-EP-801 Tasks (F#)	Identified Gaps with Procedural Tasks (P#)	Implementing Actions	Position eliminated?	Task Assigned to?	Min Staffing?	Key NRC PI?	Procedure(s) E-Plan section	Regulatory Requirement
EMERGENCY OPERATIONS FACILITY		EP-IP-260							
Emergency Director	F1. Receive turnover from the ED and assume command/control of EOF and activities outside the area controlled by the TSC F2. Direct the activation, operation and deactivation of the EOF. F3. Prepare and facilitate facility briefings F4. Upgrade the emergency classification level. (cannot delegate) F5. Make protective action recommendations (PAR) to offsite agencies (cannot delegate) F6. Direct and approve offsite notification to State and local agencies (cannot delegate) F7. Communicate within and between the emergency response facilities F8. Ensure event information is communicated to other organizations (NRC, Entergy Corp, etc.) to keep them informed of the emergency situation. F9. Direct the activities of the EOF organization in support of the TSC and offsite response agencies. (County, Parish and State) F10. Direct protective actions for offsite monitoring teams, EOF ERO and offsite resources. F11. Request assistance from offsite agencies, excluding requests for offsite medical/fire, security assistance. (Coordinate request for Federal assistance through the State) F12. Integrate off-site responders with site response efforts when required. F13. Authorize issuance of KI and radiation exposure in excess of 10CFR 20 limits for ERO members outside of the protected area. F14. Authorize press releases (cannot delegate) F15. Direct facility relocation to the alternate EOF (where applicable) F16. Determine reportability actions for non-emergency reportable events during an emergency (hazardous material spills, contaminated injured personnel, and so forth). F17. Conduct turnover of command and control to relief ED. F18. Terminate the event in accordance with procedures (cannot delegate) F19. Establish and direct recovery actions	P1. Fill vacant positions if needed P2. Maintain a log P3. De escalation to the Recovery Phase P4. During a Security Event, coordinate with Incident Command Post (ICP)	F3 - task from EOF Manager	No	N/A	Yes	Yes	EP-IP-260, Att. 9.1 Eplan TOC Eplan A-8 Eplan A-9 Eplan B-1 through B-3 Eplan B-5 & B-6 Eplan B-8 Eplan B-10 Eplan E-1 & E-2 Eplan G-1 Eplan H-1 Eplan H-7 Eplan J-2 & J-3 Eplan K-1 Eplan M-2 Eplan O-3 Eplan O-8 Eplan App-3	F1. NUREG 0654 II.A.1.d/II.B.3/II.B.5 F11/P1. NUREG 0654 II.A.4 F4. NUREG 0654 II.B.4 F5. NUREG 0654 II.B.4/II.J.7 F6. NUREG 0654 II.B.4 F5./F8. NUREG 0654 II.B.7.c F11. NUREG 0654 II.B.7.a/II.C.1.a F13. NUREG 0654 II.K.2 F14. NUREG 0654 II.B.4/II.B.7.d F18. NUREG 0654 II.B.4 F19/P3. NUREG 0654 II.B.7.b/II.K.6.c/II.M.2
Radiological Assessment Coord	F1. Direct the activities of the dose assessor and radiological offsite monitoring teams. F2. Evaluate dose assessment results and recommendations. F3. Determine dose consequences F4. Communicate dose projection results to the ED to determine classification or PAR. F5. Keep the ED apprised of offsite radiological conditions. F6. Maintain awareness of dose projections generated by NRC, state and utility models and recognize differences. F7. Provide overall liaison and coordination of efforts in the area of field team data with State Radiological Personnel. F8. Brief offsite authorities responding to the EOF on radiological information. F9. Contact the NRC on Health Physics Network (HPN) Line. (Can be designated to another staff member) F10. Direct possible predictive and worst-case dose projections. F11. Monitor or direct monitoring of ERF habitability. F12. Ensure facility emergency ventilation in service (where applicable) F13. Recommend EOF relocation based on environmental conditions and provide radiological guidance for the EOF evacuation, where applicable. F14. Monitor information from displays or reports to detect changes that affect dose assessment. F15. Establish radiological controls for supplemental and relief personnel responding to the station. F16. Recommend emergency exposure limits and KI for EOF ERO or offsite monitoring teams F17. Coordinate the administration of KI.	P1. Maintain a log	P11 - task from EOF Manager	No	N/A	Yes	Yes	EN-IP-260, Att. 9.3 Eplan B-1 Eplan B-3 Eplan B-5 Eplan I-3 Eplan K-1 & K-2 Eplan App-3	F9. NUREG 0654 II.A.1.e
Off-site Communicator	F1. Ensure the Emergency Director approves all notifications forms to State/Local agencies. F2. Make notification to the State and local agencies as required by regulations using primary and backup notification system. F3. Verify State and local agencies received and understand the notification F4. Make follow-up notifications F5. Maintain records of all notifications and communications	N/A	N/A	No	N/A	Yes	Yes	EN-IP-260, Att. 9.6 Eplan B-2 Eplan B-5 Eplan B-8 Eapln O-8 Eplan App-3	F2. NUREG 0654 II.A.1.e
Technical Advisor	F1. Maintain contact with the TSC and Control Room to obtain current plant and emergency status F2. Monitor plant computer system parameters. F3. Recommend actions on classification of emergencies F4. Support PAR decision making/determination.	P1. Maintain a log. P2. If SPDS is unavailable, ensure the EOF Communicator mans the Plant Data Phone and obtains the Plant Data Form via WeEOC or other methods.	F8 - task from EOF Manager P3 - task from EOF Manager P7 - task from EOF Manager F1 - task from A & L Coord F2 - task from A & L Coord F3 - task from A & L Coord F4 - task from A & L Coord P2 - task from A & L Coord P3 - task from A & L Coord P4 - task from A & L Coord F1 - task from JIC Tech Advisor F2 - task from JIC Tech Advisor (change wording) F3 - task from JIC Tech Advisor (change wording)	No	N/A	No	No	EN-IP-260, Att. 9.4 Eplan B-3 Eplan B-5	N/A

Attachment 6 - ERO TASK ANALYSIS

Current ERO Position	EN-EP-801 Tasks (F#)	Identified Gaps with Procedural Tasks (P#)	Implementing Actions	Position eliminated?	Task Assigned to?	Min Staffing?	Key NRC PI?	Procedure(s) E-Plan section	Regulatory Requirement
EOF Manager	F1. Direct activities of the EOF personnel F2. Assure staffing and timely activation of the EOF F3. Obtain additional resources through the Admin/Logistics Coordinator when necessary F4. Brief and assist offsite authorities responding to the EOF F5. Assist Rad Assessment Coordinator with facility habitability and emergency ventilation system operation per procedure (site specific) F6. Ensure correct and timely State and local notifications are made within regulatory requirements F7. Ensure WebEOC or status boards are maintained F8. Notify Entergy Corporate Office and Corporate Emergency Center	P1. Ensure the Radiological Assessment Coordinator is activating the Dose Assessment Area P2. Ensure the Offsite Communicator is activating the communications area. P3. Ensure appropriate personnel staff the EOF entrance and screens incoming personnel for FFD P4. Ensure the Administration and Logistics Coordinator is activating the logistics support area. P5. Provide notifications that EOF is operational P6. Ensure the Administration and Logistics Coordinator checks all EOF personnel for proper credentials. P7. Ensure the IT specialist synchronizes clocks with the Control Room. P8.Ensure personnel are assigned to maintain each of the status boards if SPDS/WebEOC are not available. P9. Ensure the Lead Offsite Liaison maintains logs of reports from Offsite Liaisons. P10. Coordinatre facility relocation if necessary. P11. Ensure current classification level is posted throughout the facility P12. Assist in termination to Recovery Phase. P13. Activate the HVAC, if needed.	Eliminate Position F1 - eliminate task - ED already responsible for this (F2) F2 - eliminate task - ED already responsible for this (F2) F4 - eliminate task (already done by Lead Offsite Liaison( F1)) F5 - eliminate task (RAC does - F11) F6 - eliminate task (Off-Site Comm doing) F7 - eliminate task (ED responsible for this (F2) P1 - eliminate task (RAC doing) P2 - eliminate task (Offsite Communicator doing) P4 - eliminate task (Admin & Logistics doing) P5 - eliminate task (ED responsible for this - F2) P6 - eliminate task (Admin & Logistics doing) P8 - eliminate task (ED responsible for this - F2) P9 - eliminate task (Lead Offsite Liaison doing) P10 - eliminate task (ED responsible for this - F2) P12 - eliminate task (ED responsible for this - F19)	Yes	F3 - Emergency Director F8 - Technical Advisor P3 - Technical Advisor P7 - Technical Advisor P11 - Rad Assessment Coord P13 - Rad Assessment Coord	Yes	No	EN-IP-260, Att. 9.2 Eplan B-2 & B-3 Eplan B-5 Eplan B-8 Eplan B-10 Eplan M-2 Eplan O-8 Eplan App-3	N/A
EOF Communicator	F1. Transmit and receive information from onsite ERF's. F2. Ensure EOF is notified of information received of significant changes in plant conditions (e.g., start of a release, LOCA, EAL conditions) F3. Document information on the required forms or WebEOC F4. Assist the EOF Manager with other non-regulatory notifications or communications	N/A	Eliminate Position F1 - eliminate task (EOF Tech Advisor doing this) F2 - eliminate task (EOF Tech Advisor doing this) F3 - eliminate task (EOF Tech Advisor doing this) F4 - eliminate task	Yes	N/A	No	No	EN-IP-260, Att. 9.7 Eplan B-8 Eplan App-3	N/A
EOF Log Keeper	F1. Maintain a chronological log of emergency status and EOF activities on WebEOC or other acceptable method F2. Ensure timeliness of facility briefs by prompting the Emergency Director of the briefing schedule if necessary F3. Support the EOF Manager / ED as requested	P1. Collect and distribute forms as necessary.	Eliminate position F1 - eliminate task (ED already does this) F2 - eliminate task F3 - eliminate task P1 - eliminate task	Yes	N/A	No	No	EN-IP-260, Att. 9.14 Eplan O-8	N/A
Lead Offsite Liaison	F1. Obtain plant information and ensure the offsite agencies located in the EOF and the offsite liaisons are briefed on the plant conditions.	P1. Maintain a log. P2. Support the EOF Manager as requested.	F1 - task from Town Liaisons F2 - task from Town Liaisons change F1 wording to ensure off-site towns are briefed vis bridge line	No	N/A	No	No	EN-IP-260, Att. 9.8 Eplan TOC Eplan B-2 Eplan B-5 Eplan C-1 Eplan H-3 Eplan O-7	N/A
Admin & Logistics Coord	F1. Manage 24 hour staffing of the emergency response facilities. F2. Manage logistics for supporting the onsite and offsite emergency response such as additional support personnel or equipment, meals, lodging, etc. F3. Coordinate access security measures in the EOF if applicable	P1. Maintain a log. P2. Ensure all EOF personnel have proper credentials. P3. Ensure Security administers FFD testing as required. P4. Coordinate Assembly Area activation and operation.	Eliminate position P1 - eliminate task	Yes	F1 - Technical Advisor F2 - Technical Advisor F3 - Technical Advisor F4 - Technical Advisor P2 - Technical Advisor P3 - Technical Advisor P4 - Technical Advisor	No	No	EN-IP-260, Att. 9.5 Eplan B-2 Eplan B-4 & B-5 Eplan B-16 Eplan App-3	F1. NUREG 0654 II.A.1.e F1./F2. NUREG 0654 II.A.4 F2. NUREG 0654 II.B.7.a
IT Specialist	F1. Monitor facility equipment (computer related and communications) to ensure adequate operation F2. Resolve any IT related malfunctions F3. Verify or perform ERDS activation. F4. Assist with issues related to WebEOC, if available	P1. Maintain a log.	Eliminate position P1 - eliminate task	Yes	F1 - IT Helpdesk F2 - IT Helpdesk F3 - Control Room F4 - IT Helpdesk	No	No	EN-IP-260, Att. 9.13	N/A
Dose Assessor (2)	F1. Support the radiological activities of the EOF F2. Obtain data from offsite monitoring team reports, meteorological and radiological data, and plant data F3. Perform dose projection calculations using plant data and offsite monitoring team data. F4. Perform possible predictive (what-if) and worst case dose projections when directed F5. Provide offsite dose projection information to the RAC F6. Monitor available parameter indications to detect changes that affect dose assessment. F7. Perform dose projections using primary and backup methods	P1. Maintain a log.	N/A	No (reduce to 1)	N/A	Yes	No	EN-IP-260, Att. 9.10 Eplan B-5 Eplan B-15 Eplan O-8	N/A



Attachment 6 - ERO TASK ANALYSIS

Current ERO Position	EN-EP-801 Tasks (F#)	Identified Gaps with Procedural Tasks (P#)	Implementing Actions	Position eliminated?	Task Assigned to?	Min Staffing?	Key NRC PI?	Procedure(s) E-Plan section	Regulatory Requirement
Off-site Team Coordinator	F1. Maintain communications with offsite monitoring teams (OMT). F2. Employ and direct OMT based on radiological /met information. F3. Supervise/develop a plume tracking strategy. F4. Log communications with OMT to include dose /air sample survey results, dosimeter reading, etc. F5. Ensure radiological information is communicated to the RAC for possible modifications to the dose calculations F6. Support coordination of efforts in the area of offsite monitoring team data with State radiological personnel F7. Ensure team is aware of changing plant / meteorological conditions F8. Ensure team is notified on KI requirements	P1. Maintain a log. P2. As requested by Radiological Assessment Coordinator, perform or delegate habitability surveys of the EOF. P3. Prepare for and conduct the isotopic analysis of OMT air samples. P4. Coordinate collection, storage, and subsequent transport of samples. P5. Request assistance from offsite labs if needed.	N/A	No	N/A	No	No	EN-IP-260, Att. 9.11 Eplan B-5 Eplan B-15 Eplan I-3	F1. NUREG 0654 II.A.1.e
Offsite Liaisons (6) Reduce to 2 (Commonwealth and Plymouth)	F1. Obtain plant information and ensure the offsite agencies located in the EOC are briefed on the plant conditions. F2. Clarify plant conditions, respond to questions, etc. for the offsite agencies.	P1. Maintain a log.	N/A	Yes - Reduce to 1 at State and 1 at Plymouth EOCs	Carver, Kingston, Duxbury, and Marshfield EOCs Offsite Liaison tasks assigned to Lead Off-Site Liaison in EOF with communications via a bridge line	No	No	EN-IP-260, Att. 9.9 Eplan TOC Eplan B-2 Eplan B-5 Eplan C-1 Eplan H-3 Eplan O-7	F1./F2. NUREG 0654 II.C.2.b
Monitoring Team - No. 1 (2)	F1. Perform activities directed by the OTC to support plume tracking and measurements F2. Monitor self reading dosimeters and report results back to the OTC F3. Implement KI protective measures when notified by the OTC	N/A	N/A	No	N/A	No	No	EN-IP-260, Att. 9.12 Eplan TOC Eplan B-5 Eplan B-15 Eplan D-3 & D-4 Eplan F-1 & F-2 Eplan F-7 Eplan H-6 Eplan I-3 Eplan N-2 Eplan O-3 & O-4 Eplan O-7 Eplan App-3 Eplan App-13	F1. NUREG 0654 II.B.5, Table B-1
Monitoring Team - No.2 (2)	F1. Perform activities directed by the OTC to support plume tracking and measurements F2. Monitor self reading dosimeters and report results back to the OTC F3. Implement KI protective measures when notified by the OTC	N/A	N/A	No	N/A	No	No	EN-IP-260, Att. 9.12 Eplan TOC Eplan B-5 Eplan B-15 Eplan D-3 & D-4 Eplan F-1 & F-2 Eplan F-7 Eplan H-6 Eplan I-3 Eplan N-2 Eplan O-3 & O-4 Eplan O-7 Eplan App-3 Eplan App-13	F1. NUREG 0654 II.B.5, Table B-1
Public Information Liaison	F1. Ensure JIC is provided with current plant status F2. Ensure classification upgrades are communicated to Company Spokesperson to ensure media briefings are accurate F3. Review press releases and provide to the ED for approval	N/A	Eliminate Position F1 - eliminate task (JIC Tech Advisor - P2) F2 - eliminate task (JIC Tech Advisor - P2) F3 - eliminate task (JIC Manager - F2)	Yes	N/A	No	No	EN-IP-260, Att. 9.15	N/A
TECHNICAL SUPPORT CENTER		EP-IP-261							
Emergency Plant Manager	F1. Direct the activation, operation and deactivation of the TSC F2. Assume command and control of the TSC and OSC and the onsite mitigation efforts F3. Provide information and recommendations to the ED regarding the classification of an emergency F4. Prepare and facilitate facility briefings F5. Verify event classifications F6. Ensure timely ENS notifications F7. Perform accident assessment to prioritize mitigation actions. F8. Coordinate the activities of the CR, TSC and OSC F9. Direct personnel evacuation, assembly and accountability of non-essential personnel F10. Provide information and recommendations to the ED regarding plant activities F11. Advise the ED on core damage and plant conditions for classification and PAR determination. F12. Direct the organization, coordination, and prioritization of repair corrective action teams F13. Direct onsite protective actions F14. Authorize emergency radiation exposure and issuance of KI to recommended personnel in the CR, TSC or OSC or to Security personnel. F15. Make operational decisions involving the safety of the plant and its personnel and make recommendations to the Control Room Personnel F16. Initiate immediate corrective actions to limit or contain the emergency invoking the provisions of 10 CFR 50.54(x) if appropriate F17. Implement severe accident management procedure strategies F18. Direct relocation to an alternate location. F19. Integrate offsite responders with on-site response efforts when required F20. Perform emergency termination duties	P1. Ensure the TSC Communicator maintains a log of all pertinent actions and decisions made during the response. P2. Ensure the TSC Manager completes an Emergency Response organization roster for the TSC, Security and Control Room. P3. Instruct the TSC Manager to ensure clocks are synchronized with the official Control Room time. P4. Maintain adequate staffing, access control, and 24-hour functional continuity of the CR, TSC, and OSC.	F1 - task from TSC Communicator	No	N/A	Yes	Yes	EN-IP-261, Att. 9.1 Eplan A-8 Eplan B-1 Eplan B-3 & B-4 Eplan B-8 Eplan B-10 Eplan H-1 Eplan J-2 Eplan K-1 & K-2 Eplan M-1 & M-2 Eplan O-3 Eplan App-3	F2. NUREG 0654 II.A.1.d/II.B.3 P2. NUREG 0654 II.J.5 F14. NUREG 0654 II.K.2

Attachment 6 - ERO TASK ANALYSIS

Current ERO Position	EN-EP-801 Tasks (F#)	Identified Gaps with Procedural Tasks (P#)	Implementing Actions	Position eliminated?	Task Assigned to?	Min Staffing?	Key NRC PI?	Procedure(s) E-Plan section	Regulatory Requirement
TSC Manager	F1. Assure staffing/timely activation of the TSC. F2. Notify EPM when operational conditions exist. F3. Recognize and implement all technical aspects of accident mitigation for the emergency. F4. Perform technical assessments and communicate the conclusions to the EPM. F5. Set priorities for the TSC personnel/OSC Teams. F6. Assist the EPM to make operational decisions concerning the safety of the plant. F7. Oversee the activities for relocation to an alternate location. F8. Direct the tracking of plant configuration changes. F9. Deactivate the TSC when the emergency is terminated.	P1. Maintain log. P2. If WebEOC is unavailable, ensure the TSC Communicator is updating the Plant Data Form and Event Chronology Status Boards. P3. Ensure the TSC ventilation system is in appropriate Operational mode (Ops Support in OSC performs). P4. Provide periodic briefings to all TSC personnel. P5. Direct EOP questions to the Operations Coordinator.	Eliminate position F1 - eliminate task (EPM does - F1) F2 - eliminate task (already done by EPM - F1) F3 - eliminate task (EPM does - F7) F4 - eliminate task (EPM does - F7) F5 - eliminate task (EPM does - F12) F6 - eliminate task (EPM does - F15) F7 - eliminate task (EPM does - F18) F9 - eliminate task - EPM does - F1) P1 - eliminate task P2 - eliminate task P4 - eliminate task P5 - eliminate task P5 - eliminate task P6 - eliminate task	Yes	F8 - Ops Coord P3 - OSC Coord	Yes	No	EN-IP-261, Att. 9.2 Eplan B-1 Eplan B-4 & B-5 Eplan B-10	N/A
Operations Coordinator	1. Coordinate TSC efforts in determining the nature and extent of emergencies pertaining to equipment and plant facilities in support of Control Room actions. 2. Perform accident assessment activities. 3. Provide assistance to initiate immediate corrective actions to limit or contain the emergency invoking the provisions of 10 CFR 50.54(x)1 if appropriate, and specifically when addressing Severe Accident Management Guidelines (SAMG/SAG). 4. Recommend equipment operations checks and miscellaneous actions to the Control Room in support of restoration and accident mitigation. 5. Approve emergency special procedures, and implement as required under the provisions of 10 CFR 50.54(x)1 if qualified. 6. Recommend changes in plant priorities. 7. Assist the Maintenance Coordinator in determining the priority assigned to OSC activities. 8. Coordinate additional staffing for the Control Room if requested by the SM. 9. Provide input on event classification. 10. Assist the EPM in evaluating changes in event classification. 11. At the direction of the EPM, assume the duties and responsibilities of the Evaluator, or Decision-Maker if qualified, when transition to Severe Accident Management Guidelines (SAMG/SAG) is initiated. 12. Inform the TSC of the overall plant condition and significant changes to system and equipment status. 13. Ensure the Control Room, TSC, and EOF is informed of significant changes in event status (e.g. changes in classification, command and control, initiation of station assembly, accountability, evacuation, etc.). 14. Coordinate CR request for operations activities outside of the Control Room 15. Provide technical assistance to the Shift Manager. 16. Recommend strategies and actions to prevent severe core damage and containment failure and reduce radiological release.	P1. Place the TSC ventilation system in the appropriate operational mode. P2. Ensure Operations Engineering is staffed. P3. Provide technical support to OSC teams	F8 - task from TSC Mgr	No	N/A	Yes	Yes	EN-IP-261, Att. 9. 8 Eplan H-1	N/A
Radiological Coordinator	F1. Assess radiological conditions to develop radiological plans. F2. Keep the TSC Manager informed of the radiological conditions. F3. Obtain and evaluate data on plant conditions such as meteorological and radiological monitoring readings, and other pertinent data. F4. Ensure that appropriate bioassay procedures have been implemented for onsite personnel when a radioactivity incident has occurred. F5. Recommend authorization of personnel emergency exposure limits. F6. Advise the TSC Manager when use of KI should be considered and coordinate the issuance if approved. F7. Recommend evacuation based on environmental conditions F8. Advise the TSC Manager and EOF Radiological Assessment Coordinator of changes in radiological release status. F9. Assist in planning rescue operations and provide monitoring services as required, including the transfer of injured and/or contaminated personnel. F10. Coordinate with the Security Coordinator to determine the routes to be used for evacuation of non-essential personnel and BRE's. F11. Evaluate and request additional radiation protection personnel and/or equipment. F12. Advise the Rad Chem Coordinator in the OSC of changes in plant conditions or equipment that may change radiological conditions onsite.	P1. Ensure the Rad/Chem Coordinator is controlling all entrances to the TSC/OSC. P2. Ensure the Rad/Chem Coordinator is monitoring habitability. P3. Ensure the Rad/Chem Coordinator is accessing and checking instruments. P4. Ensure all personnel responding to the TSC/OSC have dosimetry.	F1 - task from Rad/Chem Coord F2 - task from Rad/Chem Coord F3 - task from Rad/Chem Coord F4 - task from Rad/Chem Coord F5 - task from Rad/Chem Coord F6 - task from Rad/Chem Coord F7 - task from Rad/Chem Coord F12 - task from Rad/Chem Coord  Revise Rad Coord tasks: F12. Change to OSC Manager F8. Change to EPM and EOF RAC F2 - change to EPM P1 through P3 remove Rad/Chem Coord	No	N/A	Yes	Yes	EN-IP-261, Att. 9.5 Eplan B-1 Eplan B-4 & B-5 Eplan B-12 Eplan K-1 through K-3 Eplan M-1 Eplan App-3	F9. NUREG II.K.1.a P3. NUREG II.K.1.e
Engineering Coordinator	F1. Provide technical guidance to support repair activities. F2. Recommend strategies and actions to prevent severe core damage and containment failure and reduce radiological releases. F3. Coordinate Engineering work requests with the Engineering support team. F4. Provide results back to the TSC Manager. F5. Support SAMG activities and strategies. F6. Direct tracking and trending of parameters. F7. Direct the development of emergency repair procedures to support emergency teams. F8. Track plant configuration changes.	P1. Maintain a log. P2. Direct the IT Specialist to perform a verification/activation of the ERDS link. P3. Coordinate with Non Entergy engineering support (INPO, Mutual Assistance, Westinghouse, Equipment Vendors and/or NRC Engineers).	F4 - eliminate task F5 - eliminate task - SAMG no longer required	No	N/A	Yes	Yes	EN-IP-261, Att. 9.6	N/A



Attachment 6 - ERO TASK ANALYSIS

Current ERO Position	EN-EP-801 Tasks (F#)	Identified Gaps with Procedural Tasks (P#)	Implementing Actions	Position eliminated?	Task Assigned to?	Min Staffing?	Key NRC PI?	Procedure(s) E-Plan section	Regulatory Requirement
Maintenance Coordinator	F1. Communicate the request for repair and corrective teams to the OSC Work Control Coordinator. F2. Prioritizes the requests with the TSC Manager.	N/A	N/A	Not currently a part of the ERO	N/A	No	No	N/A	N/A
TSC Communicator	F1. Maintain facility log on WebEOC or other acceptable method. F2. Ensure timeliness of facility briefs by prompting EPM to develop and adhere to briefing schedule F3. Communicate between the ERF's if necessary regarding plant status or WebEOC entries. F4. Support the EPM/TSC Manager as requested.	N/A	Eliminate position F2 - eliminate task F3 - eliminate task F4 - eliminate task	Yes	F1 - EPM	No	No	EN-IP-261, Att. 9.3	N/A
ENS Communicator	F1. Prepare the NRC notification worksheet. F2. Establish and maintain communications with the NRC via the ENS phone. F3. Prepare follow-up notifications F4. Monitor plant computer parameters and provide plant status to the NRC. F5. Use backup NRC notification method if ENS line fails.	P1. Maintain a log P2. Assist the Engineering Coordinator as necessary in obtaining plant data	N/A	No - staffed in the Control Room	N/A	No	No	Eplan B-8 Eplan B-11	F2. NUREG 0654 II.A.1.e
Reactor Engineer	1. Determine and provide estimation of core damage. 2. Assist in Severe Accident Management Guideline implementation. 3. Provide core parameter information results back to the TSC Manager.	N/A	Eliminate position - no reactor responsibilities to transfer	Yes	N/A	No	No	EN-IP-261, Att. 9.7 Eplan B-8	N/A
TSC Engineer - Mechanical	F1. Respond to engineering requests from the Engineering Coordinator. F2. Evaluate SAM/SAG strategy implementation when designated	P1. Maintain a log. P2. Develop or modify procedures to perform response activities as necessary.	Eliminate position F1 - eliminate task F2 - eliminate task (no longer required) P1 - eliminate task P2 - eliminate task (Engineering Coord - F7)	Yes	N/A	No	No	EN-IP-261, Att. 9.9 Eplan B-8	F1. NUREG 0654 II.B.5 (Table B-1)
TSC Engineer - Electrical/I&C (2)	F1. Respond to engineering requests from the Engineering Coordinator. F2. Evaluate SAM/SAG strategy implementation when designated	P1. Maintain a log. P2. Develop or modify procedures to perform response activities as necessary.	Eliminate position F1 - eliminate task F2 - eliminate task (no longer required) P1 - eliminate task P2 - eliminate task (Engineering Coord - F7)	Yes	N/A	No	No	EN-IP-261, Att. 9.9 Eplan B-8 Eplan O-8	F1. NUREG 0654 II.B.5 (Table B-1)
IT Specialist	F1. Monitor facility equipment (computer related and communications) to ensure adequate operation F2. Resolve any IT related malfunctions F3. Verify or perform ERDS activation. F4. Assist with issues related to WebEOC, if available	P1. Maintain a log.	Eliminate position P1 - eliminate task	Yes	F1 - IT Helpdesk F2 - IT Helpdesk F3 - Control Room F4 - IT Helpdesk	No	No	EN-IP-261, Att. 9.10	N/A
Security Coordinator	F1. Overall coordination of the offsite assistance for the security related response. F2. Designated National Incident Management System (NIMS) Liaison between the Incident Command Post (ICP) and Site Organization. F3. Coordinate accountability F4. Keep security force advised of emergency status F5. Coordinate with Radiological Coordinator regarding protective actions for the security force. F6. Keep the ED/EPM informed of any security contingency event which may be occurring and response in progress F7. Coordinate the dispatch of security officers to evacuation assembly areas and keep the ED/EPM informed of evacuation accountability.	P1. Maintain a log. P2. Provide Security support to the Administration and Logistics Coordinator, including the EOF, if requested.	N/A	No	N/A	No	No	EN-IP-261, Att. 9.4 Eplan B-1 Eplan B-3 through B-5 Eplan B-10 Eplan B-14 Eplan J-2	N/A
Operations Engineer	Site Specific Provides Engineering Ops Support	P1. Maintain a log. P2. Develop or modify procedures to perform response activities as necessary.	Eliminate position P1 - eliminate task P2 - eliminate task (Engineering Coord - F7)	Yes		No	No	N/A	N/A
TSC SCRE	Site Specific Provides TSC Ops Support	N/A	Eliminate position	Yes		No	No	Eplan B-11	N/A
OPERATIONS SUPPORT CENTER		EP-IP-262							
OSC Manager	F1. Direct the activation, operation and deactivation activities of the OSC. F2. Coordinate and/or prioritize assessment and corrective actions with the TSC. F3. Provide periodic briefings to the OSC personnel. F4. Support the formation, briefing and debriefing of teams. F5. Maintain communications with the CR and the TSC to inform of OSC teams activities. F6. Ensure timely dispatch of the teams and mobilize other required support personnel. F7. Ensure work task priorities are being maintained. F8. Maintain OSC accountability. F9. Coordinate movement of OSC personnel to a habitable location or alternate OSC if conditions degrade. F10. Identify and request resources, equipment and supplies to support the OSC.	P1. Maintain a log.	F3 - task from Work Control Coord F1 - task from Work Coords F2 - task from Work Coords F3 - task from Work Coords F4 - task from Work Coords F5 - task from Work Coords P3 - task from TSC Manager	No	N/A	Yes	Yes	EN-IP-262, Att. 9. 1 Eplan B-1 Eplan B-4 & B-5 Eplan B-10 Eplan M-1	N/A



Attachment 6 - ERO TASK ANALYSIS

Current ERO Position	EN-EP-801 Tasks (F#)	Identified Gaps with Procedural Tasks (P#)	Implementing Actions	Position eliminated?	Task Assigned to?	Min Staffing?	Key NRC PI?	Procedure(s) E-Plan section	Regulatory Requirement
Work Control Coordinator	F1. Coordinate the formation, briefing and debriefing of repair and corrective action teams and onsite monitoring teams F2. Maintain communications with the <b>Maintenance Coordinator</b> in the TSC F3. Capture and track (log) repair/corrective action teams, search/rescue teams, onsite monitoring teams and other support personnel to ensure timely dispatch of teams	P1. Maintain adequate OSC Staffing.	<b>Eliminate position</b> F1 - eliminate task (already done by OSCM) F2 - eliminate task (already done by OSCM) P1 - eliminate task (already done by OSCM)	Yes	F3 - OSC Manager	No	No	EN-IP-262, Att. 9.4 Eplan B-4	N/A
OSC Log Keeper	F1. Maintain facility log F2. Ensure timeliness of facility briefs by prompting the OSC Manager of the briefing schedule if necessary. F3. Support the OSC Manager as requested	N/A	<b>Eliminate position</b> F1 - eliminate task (already done by OSCM - P1) F2 - eliminate task F3 - eliminate task	Yes	N/A	No	No	EN-IP-262, Att. 9.2	N/A
Rad/Chem Coordinator	F1. Coordinate RP activities, including on-site radiological assessment, personnel exposure control, and radiation protection programs. F2. Ensure use of protective clothing, respiratory protection, and access control within the plant is deemed appropriate to control personnel exposures. F3. Deploy onsite radiation monitoring teams to survey radiation levels and sample for contamination. F4. Ensure habitability of the TSC and/or OSC and habitability of Control Room (where applicable) F5. Ensure that personnel are decontaminated, if necessary. F6. Conduct/provide assistance for the rad briefings to support the dispatch of the repair/corrective action teams and chemistry/ RP sampling. F7. Communicate rad/chemistry sample results to the TSC and/or CR. F8. Coordinate the transport of potentially contaminated or highly exposed personnel to off-site medical facilities. F9. Determine the necessity for emergency exposure limits and KI issuance and communicate conditions to the TSC. F10. Provide radiological support for evacuations, medical response, fire response and search and rescue. F11. Ensure emergency ventilation filtration system is started per procedures (site specific). F12. Establish chemistry sampling priorities. F13. Debrief returning emergency teams.	P1. Maintain a log. P2. Update status board maps with current plant radiological condition as necessary. P.3 Check all instruments for operability and inventory lockers with broken seals.	<b>Eliminate position</b> F5 - Eliminate task (already done by RP Coord) F8 - Eliminate task (already done by RP Coord) F9 - Eliminate task (already done by RP Coord) F10 - Eliminate task (already done by RP Coord) F11 - eliminate task - already done by Ops Coord F13 - Eliminate task (already done by OSC Mgr)	Yes	F1 - RP Coordinator F2 - RP Coordinator F3 - RP Coordinator F4 - RP Coordinator F5 - RP Coordinator F6 - RP Coordinator F7 - RP Coordinator F12 - RP Coordinator	No	No	EN-IP-262, Att. 9.7 Eplan B-4 Eplan B-13	F5. NUREG 0654 II.K.1.e (RPC has this task)
Mechanical Work Coordinator	F1. Assign team members to the repair and corrective action teams F2. Conduct/participate in pre-job briefing for the assigned tasks. F3. Ensure repair and corrective action teams are tracked. F4. Ensure communication with the teams is maintained. F5. Participate in debriefing of returning emergency teams.	P1. Maintain a log.	<b>Eliminate Position</b>	Yes	F1 - OSC Manager F2 - OSC Manager F3 - OSC Manager F4 - OSC Manager F5 - OSC Manager	No	No	EN-IP-262, Att. 9.6	N/A
I&C / Electrical Work Coordinator	F1. Assign team members to the repair and corrective action teams. F2. Conduct/participate in pre-job briefings F3. Ensure repair and corrective action teams are tracked. F4. Ensure communication with the teams is maintained. F5. Participate in debriefing of returning emergency teams.	P1. Maintain a log.	<b>Eliminate Position</b>	Yes	F1 - OSC Manager F2 - OSC Manager F3 - OSC Manager F4 - OSC Manager F5 - OSC Manager	No	No	EN-IP-262, Att. 9.5	N/A
Operations Support	F1. Support the OSC as needed. F2. Ensure the SM is informed of OSC teams and activities. F3. Identify potential operational support needs.	P1. Maintain a log.	<b>Eliminate Position</b> F1 - Eliminate task F2 - eliminate task (already done by OSCM - F5)	Yes	N/A	No	No	EN-IP-262, Att. 9.3	N/A
Technicians (Electrical, I&C, Mechanical, Maintenance, RP/HP, Chemistry)	F1. Support the OSC as needed. F2. Perform initial actions per procedure upon arrival in the OSC. F3. Attend pre-job briefing prior to performing emergency maintenance. F4. Ensure status boards and/or WebEOC reflect the correct status. F5. Perform in-plant activities as directed by the OSC Coordinator(s). F6. Debrief team activity upon return to the OSC. F7. RP performs habitability of ERFs where applicable.	N/A	N/A	Yes - The augmenting I&C Technician and Chemistry Technician are eliminated. Number of augmenting Electrical and RP/HP Technicians reduced.	N/A	Yes	No	Eplan B-8 Eplan B-13	F1. NUREG 0654 II.B.5 (Table B-1)
Dosimetry Clerk	Site Specific Provides dosimetry support	P1. Maintain a log. P2. Issue dosimetry as needed. P3. Maintain records of dosimetry issuance and individual exposure records.	<b>Eliminate position</b> (RP Coord does)	Yes	N/A	No	No	EN-IP-262, Att. 9.8	N/A
<b>JOINT INFORMATION CENTER</b>		<b>EP-PI-261</b>							
Company Spokesperson	F1. Obtain briefing from the ED to ensure timely development of news releases. F2. Ensure that news media briefings are held regularly during the course of the emergency. F3. Serve as spokesperson at media briefings. F4. Keep the Entergy Vice President of Communications, or designee, informed throughout the emergency. F5. Resolve any known rumors or misinformation to the Media.	P1.Coordinate relocation if necessary. P2. Direct the JIC Manager to coordinate with the EOF Manager to ensure clocks are synchronized with the official Control Room time. P3. Assist with activation of the JIC. P4. Coordinate information with off-site spokespersons. P5. Coordinate media interviews with the JIC Liaison in response to media inquiries. P6. Conduct routine interviews. P7. Ensure accuracy, timeliness and completeness of news releases. P8. Conduct periodic facility briefs with JIC staff. P9. Log briefing start and finish times, documents discussed or used, highlights and any follow-up information following each news briefing. P10. Assist with termination/transition to recovery, as directed.	P1 - task from PRW P5 - from Tech Assistant P2 - change from EOF Manager to EOF Tech Advisor P2 - task from JIC tech Advisor P3 - task from JIC Tech Advisor	No	N/A	Yes	No	EN-PI-261, Att. 9.1 Eplan A-8 Eplan B-2 & B-3 Eplan B-5 & B-6 Eplan B-10 Eplan B-17 Eplan G-1 & G-2 Eplan M-4 Eplan App-3	F3. NUREG 0654 II.B.7.d/ II.G.3.a/II.G.4.a F5. NUREG 0654 II.G.4.c



Attachment 6 - ERO TASK ANALYSIS

Current ERO Position	EN-EP-801 Tasks (F#)	Identified Gaps with Procedural Tasks (P#)	Implementing Actions	Position eliminated?	Task Assigned to?	Min Staffing?	Key NRC PI?	Procedure(s) E-Plan section	Regulatory Requirement
JIC Manager	F1. Direct the activation, operation and deactivation of the JIC. F2. Obtain ED approval for the developed news releases and revise accordingly. F3. Ensure press release information is communicated to the offsite agencies. F4. Ensure press releases are coordinated with the offsite agencies. F5. Ensure appropriate timing, content and distribution of news releases. F6. Ensure activation of rumor control/public inquiry activities for response to questions from the general public. F7. Establish or ensure media briefing schedule. F8. Notify the Corporate Emergency Center (CEC).	P1. Provide/ensure assistance with distribution of KI to JIC Entergy personnel as requested/authorized. P2. Assist with facility relocation as requested.	F7 - eliminate task - CS already doing F2 - task from Info Coord F3 - task from Info Coord P2 - task from Info Coord F1 - task from Log Keeper F3 - task from Logistics Coord P2 - task from Logistics Coord F1 - task from Press Release Writer F1 - task from Inquiry Response Coord P2 - task from Tech Assistant P4 - task from Tech Assistant P2 - task from Agency Coord P3 - task from Admin Team	No	N/A	Yes	No	EN-PI-262, Att. 9.4 Eplan B-2 Eplan B-6 Eplan B-17 Eplan G-2	N/A
Technical Advisor	F1. Answer technical questions from the news media regarding the emergency situation. F2. Advise the Inquiry Response Coordinator on questions about radiation or nuclear technology to respond to phone questions from the public or media. F3. Assists the press release writer for technical accuracy, if JIC Technical Assistant position is not staffed.	P1. Maintain a log. P2. Monitor the Mitigation Line to keep up with station activities, as possible. P3. Assist Company Spokesperson in preparing for news briefings and using appropriate graphics and schematics.	Eliminate position P1 - eliminate task	Yes	F1 - EOF Tech Advisor F2 - EOF Tech Advisor F3 - EOF Tech Advisor P2 - Company Spokesperson P3 - Company Spokesperson (change wording)	No	No	EN-PI-262, Att. 9.2 Eplan B-17	N/A
Technical Assistant	Optional in EN-EP-801 F1. Assists the press release writer for technical accuracy.	P1. Maintain a chronological log of significant events for posting in the utility workroom. P2. Maintain control and distribution of public information reference materials. P3. Maintain telephone communications with the EOF Public Information Liaison. P4. Ensure transmission and/or distribution of all news releases, chronologies, news bulletins, news backgrounders and other material in a timely manner. P5. Ensure draft news releases are provided to the Emergency Director for review/approval.	Eliminate position F1 - eliminate task (Tech Adv already has task) P1 - eliminate task P3 - eliminate task	Yes	P2 - JIC Manager P4 - JIC Manager P5 - Company Spokesperson	No	No	EN-PI-262, Att. 9.16 Eplan B-17	N/A
Media Liaison	F1. Verify the readiness of the JIC briefing area. F2. Ensures media is informed of protocol and schedules established for media briefings. F3. Receive and distribute press release information to the media in the JIC briefing area.	P1.Maintain a log. P2. During and between news media briefings, take note of any unaddressed issues. P3. Coordinate interviews between reporters and JIC staff/off-site spokespersons. P4. Attend coordination meetings to prepare agenda and visual aids. P5. Moderate news briefings and provide resource and background information to the news media.	F1 - task from Logistics Coord F2 - task from Logistics Coord P1 - task from A/V Assistant P2 - task from A/V Assistant P3 - task from A/V Assistant	No	N/A	No	No	EN-PI-262, Att. 9.3 Eplan B-17	N/A
Information Coordinator	F1. Provide news bulletins / press releases for distribution F2. Supervise media monitoring and response activities. F3. Supervise public response activities. F4. Establish and maintain frequent contact with the communications personnel in the corporate office or CEC.	P1. Maintain a log. P2. Provide administrative support to JIC staff (including state, local and federal agencies). P3. Attend pre-briefings with the Company Spokesperson.	Eliminate position F1 - eliminate task (assigned to TA by elimination of Logistics Coord) F4 - eliminate task (JIC Mgr does) P1 - eliminate task P3 - eliminate task	Yes	F2 - JIC Manager F3 - JIC Manager P2 - JIC Manager	Yes	No	EN-PI-262, Att. 9.5 Eplan B-17 Eplan G-2	N/A
Press Release Writer	F1. Fax copies of press releases to the CEC/Corporate Communications	P1. Develop press releases. P2. Perform other writing duties as requested. P3. File a copy of the news release signed by the ED on the Public Information Computer for reference. P4. Brief the Public Information Liaison on news briefings, rumors and other emergency public information activities as appropriate.	Eliminate position P4 - eliminate task	Yes	F1 - JIC Manager P1 - Company Spokesperson P2 - Company Spokesperson P3 - Company Spokesperson	No	No	EN-IP-262, Att. 9.15 Eplan B-17	N/A
Logistics Coordinator	F1. Activate facility security and briefing center. F2. Maintain access control to the JIC. F3. Ensure distribution of all press releases to the offsite agencies, JIC/EOF facilities and to the Media Liaison.	P1. Maintain a log. P3. Ensure security support for the JIC.	Eliminate position P1 - eliminate task	Yes	F1 - Media Liaison F2 - Media Liaison F3 - JIC Manager P2 - JIC Manager	Yes	No	EN-IP-262, Att. 9.9 Eplan B-17	N/A
Inquiry Response Coordinator	F1. Ensure activation of rumor control activities for response to questions from the general public and media. F2. Monitor and respond to the public/media inquiry calls and track trends. F3. Refer questions on radiation or nuclear technology from Rumor Control Center to the Technical Advisor	P1. Track inquiry information (WebEOC or manually). P2. Attend briefings.	Eliminate position P1 - eliminate task P2 - eliminate task	Yes	F1 - JIC Manager F2 - Inquiry Responder F3 - Inquiry Responder	Yes	No	EN-PI-262, Att. 9.7 Eplan B-17 Eplan G-2	N/A
Media Monitors (2) Reduce to 1	F1. Monitor TV and radio broadcasts for inaccuracies F2. Report all inaccuracies to the Information Coordinator to ensure they are addressed in the media briefings.	P1. Maintain a log.	Change F2 to JIC Manager	Yes - Reduce to 1	N/A	No	No	EN-IP-262, Att. 9.8 Eplan B-17	N/A
JIC Log Keeper	F1. Maintain facility log on WebEOC or other acceptable method. F2. Support the JIC Manager as requested.	N/A	Eliminate position F2 - Eliminate task	Yes	F1 - JIC Manager	No	No	EN-PI-262, Att. 9.6 Eplan B-17	N/A
Inquiry Responders (Phone Team) (2) Reduce to 1	F1. Log questions that require a callback F2. Log rumors and provide to the Inquiry Response Coordinator	N/A	Change F2 to JIC Manager F2 - task from Inquiry Response Coord F3 - task from Inquiry Response Coord	Yes - Reduce to 1	N/A	No	No	EN-PI-262, Att. 9.14 Eplan B-17	N/A
Agency Coordinator	Site Specific Coordinates offsite interface	P1. Maintain a log. P2. Coordinate offsite interface at the JIC.	Eliminate position P1 - elminate task	Reduce to 1	P2 - JIC manager	No	No	EN-PI-262, Att. 9.10 Eplan B-17	N/A
Credentialing	Optional in EN-EP-801 F1. Establish security to restrict access to the JIC to authorized utility/government JIC responders. F2. Restrict access to the JIC media/briefing area to persons with media credentials.	Provided by Logistics Coordinator	Eliminate position	Yes	JIC Manager does this	No	No	N/A	N/A

Attachment 6 - ERO TASK ANALYSIS

Current ERO Position	EN-EP-801 Tasks (F#)	Identified Gaps with Procedural Tasks (P#)	Implementing Actions	Position eliminated?	Task Assigned to?	Min Staffing?	Key NRC PI?	Procedure(s) E-Plan section	Regulatory Requirement
Admin Team	Site Specific Supports material distribution	P1. Maintain a log. P2. Ensure Work Room Status Board is updated. P3. Transmit/distribute all approved documents.	Eliminate position P1 - eliminate task P2 - eliminate task	Yes	P3 - JIC Manager	No	No	EN-PI-262, Att. 9.11 Eplan B-17	N/A
Media Assistants	Site Specific Assists media representatives	P1. Assist the media representatives.	Eliminate position	Yes	Media Liaison does this	No	No	EN-PI-262, Att. 9.12 Eplan B-17	N/A
A/V Assistants	Site Specific Sets up JIC media briefing equipment	P1. Set up media briefings equipment. P2. Record each news briefing. P3. Record individual interviews as requested.	Eliminate position	Yes	P1 - Media Liaison P2 - Media Liaison P3 - Media Liaison	No	No	EN-PI-262, Att. 9.13 Eplan B-17	N/A

**Attachment 7**

Letter Number 2.18.004

List of Regulatory Commitments

**Attachment 7**  
**List of Regulatory Commitments**

This table identifies actions discussed in this letter for which Entergy commits to perform. Any other actions discussed in this submittal are described for the NRC's information and are not commitments.

COMMITMENT	TYPE (Check one)		SCHEDULED COMPLETION DATE (If Required)
	ONE-TIME ACTION	CONTINUING COMPLIANCE	
PNPS will provide the Commonwealth of Massachusetts and the towns of Plymouth, Carver, Kingston, Duxbury, and Marshfield with a proposed mark-up of the offsite plans and procedures addressing the proposed elimination of augmented Emergency Response Organization positions.	x		Prior to implementation of ERO changes
Training and procedures will be developed and in place prior to performing post-shutdown Emergency Response Organization validation drills. The drill scenarios will include spent fuel pool events and will be designed to test the major elements of the PNPS Post-Shutdown Emergency Plan. Major elements to be tested will include communications and coordination with offsite response organization, including the Joint Information Center.	x		Prior to implementation of ERO changes.
ENO has not yet finalized a schedule of drills that will be conducted. Provide the NRC Project Manager a schedule of drills that will be conducted in preparation for implementation of the Post-Shutdown Emergency Plan.	x		Appropriate advanced notice to allow the NRC and U.S. Federal Emergency Management Agency (FEMA) an opportunity to observe each drill.
Revise applicable fuel handling procedures to require that a Radio Chemistry Technician be on-site or the radiation monitors listed in the gaseous effluent Emergency Action Levels are in service as a prerequisite to handling or moving spent fuel.	x		Prior to permanent removal of fuel from the PNPS reactor vessel.
State, local, and Federal response organizations will be provided the opportunity to participate in or observe the drills conducted in preparation for implementation of the PNP Post-Shutdown Emergency Plan.	x		Appropriate advanced notice to allow the NRC and FEMA an opportunity to observe each drill and allow the State/Local organizations to participate.