Entergy

Entergy Nuclear Operations, Inc.
600 Rocky Hill Road
Plymouth, MA 02360

Pilgrim Nuclear Power Station

January 14, 2013

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: Entergy Nuclear Operations, Inc.
Pilgrim Nuclear Power Station
Docket No: 50-293
License No: DPR-35

Emergency Plan Revision 40

LETTER NUMBER: 2.13.001

Dear Sir or Madam:

In accordance with 10 CFR 50.4, Entergy Nuclear Operations, Inc. (Entergy) is providing the latest revision to the Pilgrim Nuclear Power Station Emergency Plan. This Emergency Plan revision was reviewed in accordance with 10 CFR 50.54(q), screening and evaluation enclosed, and it was determined that the PNPS Emergency Plan continues to meet the planning standards outlined in 10 CFR 50.47, the effectiveness of the emergency plan is not reduced, and the changes did not require prior NRC approval.

There are no commitments contained in this letter.

If you have any questions or require additional information, please contact me at (508) 830-8227.

Sincerely,

Thomas P. White

Thomas P. White
Emergency Planning Manager
Pilgrim Nuclear Power Station

KLS/dmc
Attachments
1. PNPS Emergency Plan Revision 40
2. 10 CFR 50.54(q) Screening and Evaluation

AX45
NRR

Cc:

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U.S. Nuclear Regulatory Commission
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U.S. Nuclear Regulatory Commission
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Director of Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555

NRC Resident Inspector
Pilgrim Nuclear Power Station

ATTACHMENT 9.1 **10CFR50.54(q) SCREENING**
SHEET 1 OF 3

Procedure/Document Number: EP-PP-01	**Revision: 40**

Equipment/Facility/Other: Pilgrim Station

Title: PNPS Emergency Plan

Part I. Description of Activity Being Reviewed

This change to the PNPS Emergency Plan incorporated changes to the PNPS Table B-1 Minimum Staffing Requirements of PNPS ERO On-shift assignments to comply with changes to NRC Regulation 10CFR50, published Nov. 23, 2011, entitled "Enhancements to Emergency Preparedness Regulations" and in accordance with the On-Shift ERO Staffing Analysis required by 10CFR50 Appendix E, Section IV.A., as follows:

1. Revised assigned support by Engineer (Shift Control Room) to Shift Manager to support Notification and Communication tasks.
2. Added new position of Unlic. Nuc. Plant Operator position to support Notification and Communication.
3. Added support of Offsite Dose Assessment Tasks to RP Technician*** and Radio Chem. Technician*** positions.
4. Added new position of Unlic. Nuc. Plant Operator to support Functional Area of Repair and Corrective Actions (Safe Shutdown Tasks).
5. Added a superscript, "***FB", to On Shift Positions numbered 5 and 6, Unlic. Nuc. Plant Operators, and numbered 12, Nuc. Plant Reactor Operator to indicate Fire Brigade duties.
6. Added: "(3***, 2 [NLO or Sec])" to the Fire Brigade Position Title.
7. Added Note: "On Shift Position # 7 is Assistant to Offsite Communicator and can be replaced by an SRO that is qualified for the task".
8. Added Note: "On shift Position # 11 can be filled by an RO or SRO that is qualified for the task".
9. Added Note: "On Shift Positions # 13 and # 14 are available to support Shift Manager, where qualified, in non-fire events".
10. Added a reference to the On-shift ERO Staffing Analysis Report reading: "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."
11. Added a column "On-Shift Position Numbers" to ease indication of position title and assignment of tasks.
12. Corrected listing of support of Emergency Control / PARs from Control Room Supervisor to Shift Manager.

Part II. Activity Previously Reviewed?	☐ YES	☒ NO
Is this activity fully bounded by an NRC approved 10 CFR 50.90 submittal or Alert and Notification System Design Report? If YES, identify bounding source document number/approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below:	50.54(q)(3) Evaluation is NOT required. Enter justification below and complete Part VI.	Continue to next part

Justification:

☐ Bounding document attached (optional)

Part III. Applicability of Other Regulatory Change Control Processes

Check if any other regulatory change processes control the proposed activity.(Refer to EN-LI-100)

NOTE: For example, when a design change is the proposed activity, consequential actions may include changes to other documents which have a different change control process and are **NOT** to be included in this 50.54(q)(3) Screening.

APPLICABILITY CONCLUSION

☒ If there are no controlling change processes, continue the 50.54(q)(3) Screening.

☐ One or more controlling change processes are selected, however, some portion of the activity involves the emergency plan or affects the implementation of the emergency plan; continue the 50.54(q)(3) Screening for that portion of the activity. Identify the applicable controlling change processes below.

☐ One or more controlling change processes are selected and fully bounds all aspects of the activity. 50.54(q)(3) Evaluation is NOT required. Identify controlling change processes below and complete Part VI.

CONTROLLING CHANGE PROCESSES

10CFR50.54 Q

Part IV. Editorial Change Is this activity an editorial or typographical change such as formatting, paragraph numbering, spelling, or punctuation that does not change intent? Yes: Items 11 and 12 **Justification:** Item 11 is an editorially added column entitled "On-shift Position Number" which simply assigned numbers to specific on-shift positions to ease reference to positions and assignment of responsibilities. Item 12 corrected an editorial error of title: Emergency Control/PAR is a non-delegable responsibility of the Shift Manager/Emergency Director, not the Control Room Supervisor. This correction does not change the intent of this non-delegable task. "No" is checked because the procedure revision contains other changes that are not editorial.	☒YES 50.54(q) (3) Evaluation is NOT required for Item 11 and 12. Enter justification and complete Part VI.	☒ NO Continue to next part

Procedure/Document Number: EP-PP-01	**Revision: 40**
Equipment/Facility/Other: Pilgrim Station	
Title: PNPS Emergency Plan	
Part V. Emergency Planning Element/Function Screen (Associated 10 CFR 50.47(b) planning standard function identified in brackets) Does this activity affect any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II?	
1. Responsibility for emergency response is assigned. [1]	☒
2. The response organization has the staff to respond and to augment staff on a continuing basis (24/7 staffing) in accordance with the emergency plan. [1]	☒
3. The process ensures that on shift emergency response responsibilities are staffed and assigned. [2]	☒
4. The process for timely augmentation of onshift staff is established and maintained. [2]	☐
5. Arrangements for requesting and using off site assistance have been made. [3]	☐
6. State and local staff can be accommodated at the EOF in accordance with the emergency plan. [3]	☐
7. A standard scheme of emergency classification and action levels is in use. [4]	☐
8. Procedures for notification of State and local governmental agencies are capable of alerting them of the declared emergency within 15 minutes after declaration of an emergency and providing follow-up notifications. [5]	☐
9. Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway. [5]	☐
10. The public ANS meets the design requirements of FEMA-REP-10, Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants, or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter. [5]	☐
11. Systems are established for prompt communication among principal emergency response organizations. [6]	☐
12. Systems are established for prompt communication to emergency response personnel. [6]	☐
13. Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ). [7]	☐
14. Coordinated dissemination of public information during emergencies is established. [7]	☐
15. Adequate facilities are maintained to support emergency response. [8]	☐
16. Adequate equipment is maintained to support emergency response. [8]	☐
17. Methods, systems, and equipment for assessment of radioactive releases are in use. [9]	☐
18. A range of public PARs is available for implementation during emergencies. [10]	☐
19. Evacuation time estimates for the population located in the plume exposure pathway EPZ are available to support the formulation of PARs and have been provided to State and local governmental authorities. [10]	☐
20. A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.[10]	☐

ATTACHMENT 9.1 **10CFR50.54(q) SCREENING**
SHEET 3 OF 3

Procedure/Document Number: EP-PP-01	**Revision: 40**
Equipment/Facility/Other: Pilgrim Station	
Title: PNPS Emergency Plan	
21. The resources for controlling radiological exposures for emergency workers are established. [11]	☐
22. Arrangements are made for medical services for contaminated, injured individuals. [12]	☐
23. Plans for recovery and reentry are developed. [13]	☐
24. A drill and exercise program (including radiological, medical, health physics and other program areas) is established. [14]	☐
25. Drills, exercises, and training evolutions that provide performance opportunities to develop, maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses. [14]	☐
26. Identified weaknesses are corrected. [14]	☐
27. Training is provided to emergency responders. [15]	☐
28. Responsibility for emergency plan development and review is established. [16]	☐
29. Planners responsible for emergency plan development and maintenance are properly trained. [16]	☐

APPLICABILITY CONCLUSION

☐ If no Part V criteria are checked, a 50.54(q)(3) Evaluation is NOT required; document the basis for conclusion below and complete Part VI.

☒ If any Part V criteria are checked, complete Part VI and perform a 50.54(q)(3) Evaluation.

BASIS FOR CONCLUSION

Item 10 - Added a reference to the on-shift ERO Staffing Analysis Report reading: "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 change to the PNPS Emergency Plan Table B-1 addressed the new requirements of 10CFR50 Appendix E, Section IV. A. 9 issued on November 23, 2011 which stated: "By December 24, 2012, for nuclear power reactor licensees, 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." The staffing analysis was conducted in accordance with NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities" and required by 10CFR50 Appendix E, Section IV.A. The staffing analysis provides a process for determining adequate on-shift staffing levels and the proper assignment of emergency tasks to the on-shift staff. In accordance with Entergy Fleet guidance, the On-shift ERO Staffing Analysis Report has been incorporated as part of the PNPS Emergency Plan by reference and will be controlled through Merlin as a separate but linked controlled document. The reference to a 30 day incorporation period from the date of approval aligns with the 30-day interim period allowed by the new regulatory requirements. This 30-day period was provided to establish compensatory actions to ensure completion of the steps required to augment minimum staffing positions including the placement of additional staff on-shift and reassignment of responsibilities, as needed. The revision of Table B-1 to the PNPS Emergency Plan to include a reference to the On-shift ERO Staffing Analysis does not impact any of the 10 CFR 50.47(b) planning standard functions or program elements from NUREG-0654/FEMA REP-1 Section II. Referencing the On-shift ERO Staffing Analysis in Table B-1 does not alter the requirement to maintain an on-shift emergency response organization or the requirement for the on-shift emergency responders to be assigned responsibility for emergency functions and tasks. Table B-1 will continue to list the station minimum staff requirements and augmentation capabilities to respond to an emergency. This change is identified as an administrative change and no further evaluation is required.

The proposed changes of Table B-1 to the PNPS Emergency Plan to include the addition of two (2) Unlicensed Nuclear Plant Operators, added support to offsite dose assessment capabilities, reassigned notification duties from the Engineer (Shift Control Room) to the Shift Manager, clarified Fire Brigade

responsibilities and added various notes and references affect the emergency planning elements of 10CFR50.47(b)(1 and 2). A 10CFR50.54(q) evaluation will be performed to determine if the effectiveness of the emergency plan is reduced and prior NRC approval is required.

Part VI. Signatures:

Preparer Name (Print) Karen Sullivan	Preparer Signature Karen Sullivan (electronic signature)	Date: 12/12/2012
(Optional) Reviewer Name (Print) Ed Salomon	Reviewer Signature Edward H. Salomon	Date: 12/17/12
Reviewer Name (Print) David K. Townsend Nuclear EP Project Manager	Reviewer Signature DK Townsend	Date: 12/12/12
Approver Name (Print) Tom White EP manager or designee	Approver Signature Thomas P. White	Date: 12/17/12

Procedure/Document Number: Emergency Plan	Revision: 40
Equipment/Facility/Other: Pilgrim Station	
Title: PNPS Emergency Plan	

Part I. Description of Proposed Change: This change to the PNPS Emergency Plan incorporated changes to the PNPS Table B-1 Minimum Staffing Requirements of the PNPS ERO On-shift assignments to comply with changes to NRC Regulations 10CFR50, published Nov. 23, 2011, entitled "Enhancements to Emergency Preparedness Regulations" and in accordance with On-Shift ERO Staffing Analysis required by 10CFR50 Appendix E, Section IV.A., as follows:

1. Revised assigned support by Engineer (Shift Control Room) to Shift Manager to support Notification and Communication tasks.
2. Added new position of Unlic. Nuc. Plant Operator position to support Notification and Communication
3. Added support of Offsite Dose Assessment Tasks to RP Technician*** and Radio Chem. Technician*** positions.
4. Added new position of Unlicensed Nuclear Plant Operator to support Functional Area of Repair and Corrective Actions (Safe Shutdown Tasks).
5. Added a superscript, "***FB", to On-shift Positions numbered 5 and 6, Unlicensed Nuclear Plant Operators, and numbered 12, Nuclear Plant Reactor Operator.
6. Added: "(3***, 2 [NLO or Sec])" to the Fire Brigade Position Title;
7. Added Note: "On-shift Position # 7 is Assistant to Offsite Communicator and can be replaced by an SRO that is qualified for the task"
8. Added Note: "On-shift Position # 11 can be filled by an RO or SRO that is qualified for the task".
9. Added Note: "On-shift Positions # 13 and # 14 are available to support Shift Manager, where qualified, in non-fire events".

Part II. Description and Review of Licensing Basis Affected by the Proposed Change:

The PAD performed per EN-LI-100 concluded that the applicable portions of LBDs that were reviewed, including the Technical Specifications, including the index of Technical Specification Changes, and UFSAR, are not affected by the PNPS Emergency Plan change and did not contain any relevant additional information. Also reviewed were the Nuclear Training Manual, EN-TQ-110, and. These documents also were not impacted by the PNPS Emergency Plan change. PNPS EP procedures were reviewed, with EP-IP-100, "Emergency Classifications and Notifications", EP-IP-300, "Offsite Radiological Dose Assessment", and EP-IP-400, "Protective Action Recommendation" being impacted and will require revisions to assignment of responsibilities.

The potentially affected sections of the PNPS Emergency Plan that were reviewed included Section B, Station Emergency Organization, Section F, Emergency Communications and Section O, Emergency Response Training. Language contained within these sections of the PNPS Emergency Plan were consistent with the proposed changes to the PNPS Emergency Plan. These proposed changes were also reviewed in consideration of changes identified within the PNPS Emergency Plan Chronology of changes, which identified the following historic change with potential impact due to the proposed changes.

1. Section B, Station Emergency Organization, Table B-1, Revision 35 of the PNPS Emergency Plan issued on 4/8/2010, made title and organizational relationship changes which correspond with Table B-1 and Figures B1-a through B1-h, including revision of former PNPS ERO position titles to Standard ERO position titles, added references to the ICP Security Coordinator and the title of the Joint Information Center. This change reflected the transition to the Standard ERO, formalized the relationship of the ICP Security Coordinator within the station ERO and updated the title of the "Media Center" to the "Joint Information Center." Table B-1 was also changed in this revision to include title changes and transfer of notification assignment from Communications Staff personnel within the EOF to the Offsite Communicator within the EOF and the existing ENS communicator call-in position in the Control Room. These changes were also an element of the Standard ERO and ensured ongoing assigned responsibility for notification and communication with offsite jurisdictions. These changes did not impact on-shift ERO position assignments.

Part II. Description and Review of Licensing Basis Affected by the Proposed Change, cont.

2. Table B-1, Revision 33 of the PNPS Emergency Plan issued on 2/25/2008 revised the number of "on-shift" Radiation Protection (RP) technicians listed as required to support the Onsite and In-plant Surveys task from two (2) RP Technicians to one (1) technician. (NRC Safety Evaluation performed, TAC No. MD2814). On-shift Chemistry Technician or other "on-shift" personnel support specific RP tasks. Also, Table B-1 note (***) associated with the "on-shift" RP Technicians revised from "Task shared with RP Technicians assigned to in-plant surveys" to "May be provided by shift personnel assigned other functions".
   NOTE: **S.E.R.** dated 2/5/07 (1.1.07.029) approved these changes to the PNPS Emergency Plan (ERO staffing of RP technicians). SER references ENO 7/14/06 (1.2.06.086) & ENO 11/17/06 (1.2.06.097).This change reduced the burden of maintaining one on-shift RP Technician over the number of RP Technicians recommended as acceptable in industry guidelines for providing E-Plan support. The initial PNPS Emergency Plan, issued in 1982, conservatively established requirement to have two RP Technicians on-shift to support Operations Accident Assessment Support Functional Area; the basis for this requirement was not documented. NUREG-0654/FEMA Rep-1 recommends one RP Technician be assigned on-shift. Subsequently, functional responsibilities of the on-shift Chemistry Technician were significantly reduced by elimination of requirements to obtain post-accident chemistry samples during the initial phase of emergency events. The PNPS basis for this change is provided *in License Amendment 204 & NRC SER dated 6/12/01. With reduction in* responsibilities of this position, the on-shift Chemistry Technician was available to support PNPS Emergency Plan RP functions and was added qualifications to perform specific E-Plan RP tasks involving in-plant surveys, access control, personnel monitoring, and issuance of dosimetry. Qualification of the on-shift Chemistry Technician to support specific RP tasks was considered an enhancement to the ability of PNPS to provide RP coverage during initial stages of an emergency event. The current proposed changes do not impact the existing procedures of the on-shift Chemistry Technician, but add a level of breadth to on-shift dose assessment capability, if needed.

3. Table B-1, Revision 25 of the PNPS Emergency Plan issued on 5/31/2002 reflected the following pertinent changes:
   a. Notification and Communications Functional Area, changed: "Operations Assistant" to "Engineer (Shift Control Rm.)*" [change in assigned position due to enhanced DNN equipment upgrade]
   b. Repair and Corrective Actions, Equipment Repairs, changed: "Nuclear Maint. Technician @, On-shift #" to "Nuclear Maint. Technician, 30 min." [change in response time from on-shift to 30 min.]
   c. Repair and Corrective Actions, Corrective Actions, changed: deleted: "Nuclear Maint. (Electrical) @, On-shift # " [replaced on-shift with additional 30 min response time position, see below}
   d. Repair and Corrective Actions, Corrective Actions, changed: "Nuclear Maint. (Electrical) 30 min" to "Nuclear Maint. (Electrical) (2) 30 min."
   e. Repair and Corrective Actions, Corrective Actions, changed: deleted: "Nuclear Control Technician, On-shift # " [replaced on-shift with additional 30 min response time position, see next cell below]
   f. Repair and Corrective Actions, Corrective Actions, changed: "Nuclear Control Technician(2) 30 min"

   These Table B-1 changes were made due to a DNN (offsite notification) equipment upgrade and analysis of Repair and Corrective Actions demonstrating actions required within the first two hours of declared emergency onset can be performed by on-shift operating staff who will be assisted by ERO when staffed. Although the above referenced DNN equipment and processes remain in place, the proposed change to add an Unlicensed Nuclear Plant Operator to on-shift staffing would assist in relieving the Shift Manager of certain Notification and Communication responsibilities. Repair and Corrective Actions performed by Nuclear Maint. Technician, Nuclear Maint. (Electrical) and Nuclear Control Technician positions are not impacted by the current proposed changes.

Part II. Description and Review of Licensing Basis Affected by the Proposed Change, cont.

4. Table B-1, Revision 17 issued 5/28/1996 removed an element of the key: "@ One individual may perform both mechanical and electrical technician functions if qualified to do so" pertaining to separate Mechanical Technician and Electrical Technician positions, which had allowed one individual to perform both functions. This element of the key had been inserted in the prior revision of the Emergency Plan; this revision returned this element to its prior status. These changes to the PNPS Emergency Plan are not impacted by the current proposed changes.

5. Table B-1, Revision 16 issued 10/17/1995 was revised to allow on-shift mechanical and electrical functions to be performed by one individual, specifically the change reduced the maintenance backshift complement from one I&C Technician, one Electrician and one Mechanic to one I&C technician and one Maintenance Technician. Added element of the key of: "@ One individual may perform both mechanical and electrical technician functions if qualified to do so" pertaining to separate Mechanical Technician and Electrical Technician positions. These changes to I&C, Electrical and Mechanical technicians within the PNPS Emergency Plan are not relevant to the proposed changes.

6. Table B-1, Revision 15 issued 8/1/1995 was revised to add the definition of "on-shift" and addition of key "#" to appropriate on-shift positions. Definition reads: "# 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 Boston Edison Management approval." These additions of a definition and key to Table B-1 are not relevant to and are not impacted by the current proposed changes.

7. Table B-1, Revision 10 issued 2/1/1991 was revised as follows:
   a. Offsite Surveys RMT Members, 30 minutes, from (3) to (2),
   b. Offsite Surveys RMT Members, 60 minutes, from (3) to (2)
   c. Radwaste Operations moved to Corrective actions, Auxiliary Operators (1) to Radwaste Operators, (1) Onshift and (1) 60 min.
   d. Revised In-Plant Surveys from RP Techs, Onshift, from (1) to (2); 30 minute, from (1) to (2), 60 minute, from (1) to (2)
   g. Revised Radiation Protection, RP Technicians, On-shift, from (1) to (2)

   Also in this PNPS Emergency Plan revision Figure B-1c, Technical Support Organization, was revised from "Called-in Shift Technical Advisor" to "Called-in STA or SCRE".

   The impact of the above changes resulted in a relocation of RMT/RP members/Techs distribution decrease of (1) 30 minute and (1) 60 minute offsite to an increase in Plant surveys of (1) on-shift, (1) 30 minute and (1) 60 minute, an overall increase of (1) technician. RP Technicians on-shift were increased by (1) position. Radwaste Operations were moved to Corrective Actions with an increase of (1) position. This position restructuring acted to enhance response capability overall. These position changes are not relevant to and are not impacted by the current proposed changes.

8. Table B-1, Revision 8 issued 10/1/1988 was revised as follows:
   a. Revised ED response time from 30 to 60 minutes
   b. Added (1) equipment operator to on-shift complement
   c. Added (1) I&C Tech to on-shift complement
   d. Added (1) Mechanical Tech to on-shift complement
   e. Added (1) Electrical Technician to on-shift complement.

   These position changes acted to increase the on-shift complement and enhance response capability overall. The change of ED response time from 30 to 60 minutes aligns with the need for minimum staffing and process capability to support activation and operation of the EOF. These position changes are not impacted by the current proposed changes.

Part II. Description and Review of Licensing Basis Affected by the Proposed Change, cont.

The Licensing Basis History document of Pilgrim Nuclear Power Station activities was reviewed for commitments with applicability to the proposed revisions. This observed pertinent activity is cited under Part II, Item 2, above.

The EP Procedure Commitment listing was reviewed with no applicable commitments identified. PNPS Emergency Preparedness and Licensing Correspondence listing generated through a Merlin Data Base query to determine if any commitments would be affected by this PNPS Emergency Plan revision with no applicable correspondence identified.

A review of the listing of PNPS Licensing Log Book entries from 1967 to 2006 resulted in the following potentially applicable correspondence:

1.2.05.086 1/3/06 Proposed Change to Emergency Plan Table B-1 (Chemistry/Radiation Protection staffing) No references listed.

1.2.06.062 7/14/06 Revised request to change to E-Plan Table B-1 to Remove one RP Technician from "on-shift" Staff 1.2.05.086, 1.5.07.006, 1.3.07.003, 1.1.06.169

1.2.06.097 11/27/06 Response to RAI: Changes to PNPS ERO (Chemistry/RP Technician (TAC No. MD2814) 1.1.06.169, 1.3.07.003

The above correspondence was resolved through the issuance of the NRC SER. dated 2/5/07 (1.1.07.029)

No other applicable documents were identified.

Part III. Describe How the Proposed Change Complies with Relevant Emergency Preparedness Regulation(s) and Previous Commitment(s) Made to the NRC:

10 CFR 50.47(b)(1) – Assignment of Responsibility/Organizational Control

- Responsibility for emergency response is assigned.
- The response organization has the staff to respond and to augment staff on a continuing basis (i.e., 24/7 support) in accordance with the emergency plan.

Site Compliance: This revision will result in a change to Table B-1 of the PNPS Emergency Plan. The change to the Table B-1 does not result in a reduction in the required minimum on-shift staffing nor does it lessen any requirements to support emergency functions or tasks. Table B-1 will continue to list the station minimum staff requirements and augmentation capabilities to respond to an emergency. The revision to Table B-1 will result in an increase in the number of on-shift staff available to respond to the emergency.

10 CFR 50.47(b)(2) – Onsite Emergency Organization – The process ensures that on-shift emergency responders' responsibilities are staffed and assigned.

Site Compliance: This revision will result in a change to Table B-1 of the PNPS Emergency Plan. The change to the Table B-1 does not result in a reduction in the required minimum on-shift staffing nor does it lessen any assigned emergent responder responsibilities. Table B-1will continue to list PNPS minimum staff requirements and emergency responder responsibilities. The revision to Table B-1 will result in an increase in the number of on-shift staff.

Previous Commitments to the NRC – The PNPS EP Procedure Listing was reviewed for potential NRC commitment changes as a result of this plan revision. There were no identified conflicts with this plan revision and the current listing of NRC commitments associated with the EP-IPs, EP-ADs or EP-PIs. The PNPS Emergency Plan Chronological Change listing was reviewed and Emergency Preparedness Licensing Correspondence was reviewed through a Merlin Data Base inquiry for applicable NRC commitments and none were found related to this Emergency Plan change with the exception of those referenced in Part II of this form.

Part IV. Description of Emergency Plan Planning Standards, Functions and Program Elements Affected by the Proposed Change:

10 CFR 50.47(b)(1) – Assignment of Responsibility/Organizational Control

- Responsibility for emergency response is assigned.
- The response organization has the staff to respond and to augment staff on a continuing basis (i.e., 24/7 support) in accordance with the emergency plan.

Sections IV.A.1–IV.A.9 of Appendix E to 10 CFR 50 provides supporting requirements. Informing criteria appear in Section II.A of NUREG-0654 and the PNPS Emergency Plan.

10 CFR 50.47(b)(2) – Onsite Emergency Organization

- The process ensures that on-shift emergency responders responsibilities are staffed and assigned.

Sections IV.A.2.a–c, IV.A.3, and IV.C of Appendix E to 10 CFR 50 provide supporting requirements. Informing criteria appears in Section II.B of NUREG-0654 and the PNPS Emergency Plan.

Part V. Description of Impact of the Proposed Change on the Effectiveness of Emergency Plan Functions:

The impact of proposed changes to the PNPS Emergency Plan Table B-1 On-shift assignments in accordance with On-Shift ERO Staffing Analysis required by 10CFR50 Appendix E, Section IV.A., is discussed as follows:

1. Revised assigned support by Engineer (Shift Control Room) to Shift Manager to support Notification and Communication tasks.

This change to the PNPS Emergency Plan Table B-1 reassigns primary responsibility for Notification of PNPS, Local, Commonwealth and Federal personnel from the Engineer, Shift Control Room, (SCRE) to the Shift Manager. Although still available to assist with abbreviated NRC notifications in a Design Basis Threat and other activities as available to assist the Shift Manager, the SCRE is relieved of primary tasks associated with site, State and local and open line communication to the NRC. This will enhance the SCRE on-shift focus to the primary responsibilities of providing Technical Support for Repair and Corrective Actions to assist with controlling and mitigating the event. The Shift Manager retains responsibility to fulfill the responsibilities of the Emergency Director until properly relieved by ERO Personnel in accordance with Section B.4 of the PNPS Emergency Plan and PNPS Procedure 5.3.35.2, Operations Emergency and Transient Response Strategies, which include the "approval of notifications/communications to local, commonwealth, State and Federal government agencies and ensure that correct notifications and information updates are made in a timely manner. Table B-1 will continue to list the station minimum staff requirements and augmentation capabilities to respond to an emergency. The proposed changes to the Pilgrim Emergency Plan continue to meet the planning standards outlined in 10CFR50.47 (b) (1 and 2). The effectiveness of the Emergency Plan is not reduced. The Emergency Plan changes can be incorporated without prior NRC approval.

2. Added new position of Unlic. Nuc. Plant Operator position to support Notification and Communication tasks.

Assignment of this new position to Table B-1 adds an additional on-shift staff person to support the Major Functional Area of Notification and Communication. The revision to Table B-1 will result in an overall increase in the number of on-shift staff available to respond to the emergency and comply with the requirements of 10CFR50 Appendix E, IV.A. The revision does not result in a reduction in the required minimum on-shift staffing nor does it lessen any requirements to support emergency functions or tasks. Table B-1 will continue to list the station minimum staff requirements and augmentation capabilities to respond to an emergency. The proposed changes to the Pilgrim Emergency Plan continue to meet the planning standards outlined in 10CFR50.47(b)(1 and 2). The effectiveness of the Emergency Plan is not reduced. The Emergency Plan changes can be incorporated without prior NRC approval.

3. Added support of Offsite Dose Assessment Tasks to RP Technician*** and Radio Chem. Technician*** positions.

The On-shift Staffing Analysis determined that there are no time critical RP and Chemistry tasks and that task performance is directed and prioritized by the Shift Manager. The primary responsibility of the Radio Chem. Technician is chemistry/radiochemistry sampling, and no chemistry job tasks were noted as being time critical or required during the first 90 minutes of any analyzed event. Assignment of Offsite Dose Assessment tasks to both the RP and Radio Chem. technicians provide additional support and options to the Shift Manager based on situational based priorities. Training for all PNPS RP and Radio Chem Technicians has been developed using classroom and CBT training methods, PCBT-EP-79, "Assessing Off-Site Dose Using 'Quick Assessment'", using DAPAR, the PNPS emergency dose assessment computer program in accordance with EP-IP-300, Offsite Radiological Dose Assessment, and is scheduled for completion prior to implementation of the elements associated with this

PNPS Emergency Plan revision as referenced in Table B-1, as amended. TEAR PNP-2012-636 has been written to call for the retirement of T-ER-01-01-81 "Overview of Dose Assessment and Protective Actions Recommendations" and to stop the issuance of PCBT-EP-81 "Overview of Dose Assessment and Protective Actions Recommendations" in favor of using FCBT-EP-DOSEASSESS "Dose Assessment Fundamentals" as the prerequisite to training on off-site dose assessment. EPPOS No. 3, "Emergency Preparedness Position (EPPOS) on Requirement for On-shift Dose Assessment Capability", permits simplified dose assessment programs to minimize the burden on-shift personnel, and states that "Offsite agency notifications and protection action recommendations should not be delayed until a dose assessment can be completed. Plant conditions, that is, the status of the core and systems intended to protect the core, should be used as the basis for determining the initial protective actions for the public for severe reactor accidents involving actual or projected core damage." PNPS EP Procedure EP-IP-300, Offsite Radiological Dose Assessment, Section 4. [3] (b) assigns the Shift Control Room Engineer as responsible for "(p)erforming all dose assessment activities prior to activation of the Emergency Operations Facility." Assignment of support by RP and Radio Chem technicians to assist with on-shift dose assessment functions will relieve the Shift Control Room engineer of this task. Since the Shift Manager directs when tasks are performed, there are no overlapping RP or chemistry tasks and it is acceptable to assign the dose assessment function to the RP and Radio Chem positions. Table B-1 will continue to list the station minimum staff requirements and augmentation capabilities to respond to an emergency. The proposed changes to the Pilgrim Emergency Plan continue to meet the planning standards outlined in 10CFR50.47 (b) (1 and 2). The effectiveness of the Emergency Plan is not reduced. The Emergency Plan changes can be incorporated without prior NRC approval.

4. Added new position of Unlic. Nuc. Plant Operator to support Functional Area of Repair and Corrective Actions (Safe Shutdown Tasks).

The On-shift Staffing Analysis specified the resources available to perform "Repair and Corrective Actions" and concluded that they may be assigned as collateral duty to a designated on-shift responder, Section V B. 14. Conservatively, however, Section X. A.1, Corrective Actions and Compensatory Measures within the On-shift Staffing Analysis suggested that safe shutdown responsibilities of the STA (SCRE) be reassigned to "eliminate concurrent tasks". The primary responsibility of the newly assigned Unlicensed Nuclear Plant Operator is Corrective Actions under the Major Functional Area of Repair and Corrective Actions. This change provides additional support and options to the Shift Manager based on situational based priorities, including Safe Shutdown Tasks, if needed. A review was conducted to determine the required tasks associated with Safe Shutdown support functions for NLOs. Training for Unlicensed Nuclear Plant Operators has been developed for the performance of Safe Shutdown Tasks in accordance with PNPS Procedure 2.4.143, Shutdown from Outside Control Room and is scheduled to begin prior to implementation of the elements associated with this PNPS Emergency Plan revision as referenced in Table B-1, as amended. Positions that may be open prior to completion of the training will be met with the assignment of additional qualified personnel. The addition of a new position to support Repair and Corrective Actions enhances the ability of the on-shift to respond to emergency situations at the plant requiring corrective actions and compensatory measures. Table B-1 will continue to list the station minimum staff requirements and augmentation capabilities to respond to an emergency. The proposed changes to the Pilgrim Emergency Plan continue to meet the planning standards outlined in 10CFR50.47 (b) (1 and 2). The effectiveness of the Emergency Plan is not reduced. The Emergency Plan changes can be incorporated without prior NRC approval.

5. Added a superscript, "***FB", to On-shift Positions numbered 5 and 6, Unlicensed Nuclear Plant Operators, and numbered 12, Nuclear Plant Reactor Operator.

This change to the PNPS Emergency Plan Table B-1 clarifies existing positions with Fire Brigade response support as contained in Technical Specifications, DPR35 Section 5.0, Administrative Controls and NOP83FP1, Fire Protection Plan. This Table B-1 change added a Key indicator from the Table of triple asterisks (***) to the Fire Brigade (FB) activity, which indicates that the activities "May be provided by shift personnel assigned other functions".

This indicator has been applied to two (2) existing Unlicensed Nuclear Plant Operators assigned to the Major Task of Accident Mitigation and one (1) existing Nuclear Plant Reactor Operator assigned to the Major Task of Corrective Action with prior assigned but unnoted FB assignments. The addition of this annotation does not change the complement of staff or their assignments, but simply clarifies assignment of tasks. The proposed changes to the Pilgrim Emergency Plan continue to meet the planning standards outlined in 10CFR50.47 (b) (1 and 2). The effectiveness of the Emergency Plan is not reduced. The Emergency Plan changes can be incorporated without prior NRC approval.

6. Added: "(3***, 2 [NLO or Sec])" to the Fire Brigade Position Title;

This change to the PNPS Emergency Plan Table B-1 added reference to the source of staffing of the required 5 person complement of the PNPS Fire Brigade, including reference to the three positions discussed under item 5 above, plus two positions, one each from Operations (an NLO) and from Security. Table B-1 retains the Table Key indicator of a single asterisk (*) to indicate that the Fire Brigade positions are staffed in accordance with technical specifications. These changes to Table B-1 are made to clarify the assignment of staff assigned to the Major Task of Fire Fighting, and does not alter the complement of staff to meet the requirements of staffing the Fire Brigade as required under Technical specifications or the Fire Protection Plan. Table B-1 will continue to list the station minimum staff requirements and augmentation capabilities to respond to an emergency. The proposed changes to the Pilgrim Emergency Plan continue to meet the planning standards outlined in 10CFR50.47 (b) (1 and 2). The effectiveness of the Emergency Plan is not reduced. The Emergency Plan changes can be incorporated without prior NRC approval.

The proposed Table B-1 changes includes a revision that adds three Notes to the bottom of the table that correspond with the editorially added "On-shift Position Number" column which simply assigned numbers to specific on-shift positions to ease reference to positions and assignment of responsibilities (eliminated for evaluation in the associated 50.54(q) screening review process for this PNPS Emergency Plan change). These three notes are:

7. Added Note: "On-shift Position # 7 is Assistant to Offsite Communicator and can be replaced by an SRO that is qualified for the task"
8. Added Note: "On-shift Position # 11 can be filled by an RO or SRO that is qualified for the task".
9. Added Note: "On-shift Positions # 13 and # 14 are available to support Shift Manager, where qualified, in non-fire events".

The notes numbered 7 and 8 above, associated with Positions # 7 and # 11, provide acknowledgement that additional RO and/or SRO staff maintain training and qualifications to perform the tasks of support to the Offsite Communicator, including notification processes involving PNPS, Local, Commonwealth and Federal personnel, and Corrective Actions, including Safe Shut Down actions, respectively.
The note numbered 9 above and associated with Positions # 13 and # 14 with Fire Brigade assignments, takes advantage of the support that may be provided by these on-shift positions in the absence of emergency site tasks requiring fire response.
The recognition of additionally qualified positions and the application of staffing resources when assigned functions are not required provide additional support and response options to the Shift Manager based on situational based priorities and allows best use of minimum staffing resources. Table B-1 will continue to list the station minimum staff requirements and augmentation capabilities to respond to an emergency. The proposed changes to the Pilgrim Emergency Plan continue to meet the planning standards outlined in 10CFR50.47 (b) (1 and 2). The effectiveness of the Emergency Plan is not reduced. The Emergency Plan changes can be incorporated without prior NRC approval.

Procedure/Document Number: Emergency Plan	Revision: 40
Equipment/Facility/Other: Pilgrim Station	
Title: PNPS Emergency Plan	

Conclusion Regarding Impact

The proposed change to Table B-1 of the PNPS Emergency Plan: 1) added two (2) on-shift Unlicensed Nuclear Plant Operators under the Functional Areas of a) Notification and Communications and b) Repair and Corrective Actions, 2) added support to offsite dose assessment capabilities, 3) reassigned notification duties from the Engineer (Shift Control Room) to the Shift Manager, 4) clarified Fire Brigade responsibilities, 5) added various notes and references, and 6) made two editorial changes. The revision does not result in a reduction in the required minimum on-shift staffing nor does it lessen any requirements to support emergency functions or tasks. Table B-1 will continue to list the station minimum staff requirements and augmentation capabilities to respond to an emergency. The revision to Table B-1 will result in an overall increase in the number of on-shift staff available to respond to the emergency.

The proposed changes to the PNPS Emergency Plan continue to meet the planning standards outlined in 10CFR50.47(b)(1 and 2). The effectiveness of the PNPS Emergency Plan is not reduced. The PNPS Emergency Plan changes can be incorporated without prior NRC approval.

Part VI. Evaluation Conclusion

Answer the following questions about the proposed change.

1. Does the proposed change comply with 10 CFR 50.47(b) and 10 CFR 50 Appendix E?	☒YES ☐ NO
2. Does the proposed change maintain the effectiveness of the emergency plan (i.e., no reduction in effectiveness)?	☒YES ☐ NO
3. Does the proposed change constitute an emergency action level scheme change?	☐YES ☒ NO

If questions 1 or 2 are answered NO, or question 3 answered YES, reject the proposed change, modify the proposed change and perform a new evaluation or obtain prior NRC approval under provisions of 10 CFR 50.90. If questions 1 and 2 are answered YES, and question 3 answered NO, implement applicable change process(es). Refer to step 5.6[8].

Part VII. Signatures

Preparer Name (Print) Karen Sullivan	Preparer Signature Karen Sullivan (electronic signature)	Date: 12/12/2012
(Optional) Reviewer Name (Print) Ed Salomon	Reviewer Signature Edward A Salomon	Date: 12/17/12
Reviewer Name (Print) David K. Townsend Nuclear EP Project Manager	Reviewer Signature DKTownsend	Date: 12/12/12
Approver Name (Print) Tom White EP Manager or designee	Approver Signature Thomas White	Date: 12/17/12

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 Nuclear Safety Assurance 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.

R. Dodds, III — Date: 12/20/12
OSRC Chairman

R. Dodds, III — Date: 12/20/12
Nuclear Safety Assurance Director

D. Thyes for J. Dent — Date: 12/20/12
General Manager, Plant Operations

Robert G. Smith — Date: 12/21/12
Site Vice President (Senior Nuclear Executive)

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

Effective Date: 12/21/2012

PNPS EMERGENCY PLAN

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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 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 670 megawatts. A detailed description of the plant is given in the PNPS Final Safety Analysis Report (FSAR).

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

Section C: Scope

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

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

Section D: Planning Basis

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

PNPS EMERGENCY PLAN

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

Section E: Form and Content of Plan

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

This Plan has been formatted 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 State 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.
- 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 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.
- Massachusetts Highway Department
  - Provides traffic and access control equipment.
  - Provides resources to keep roads passable.
- Massachusetts National Guard

- Supports law enforcement agencies for traffic and access control, and security for evacuated areas.
- Transports emergency supplies.

- Massachusetts Department of Environmental Protection
  - Collects samples from public drinking water supplies within the Ingestion Exposure Pathway EPZ upon request of MDPH.
  - Restricts the use of public drinking water supplies found to be contaminated.
- Massachusetts Department of Environmental Management
  - Provides emergency notification in state parks.

- Massachusetts Department of Food and Agriculture
  - Controls contaminated foodstuffs.
  - Maintains list of agricultural facilities within the Ingestion Exposure Pathway EPZ.
- Massachusetts Department of Fisheries, Wildlife and Environmental Law Enforcement
  - Collects shellfish samples within the Ingestion Exposure Pathway EPZ.
  - Controls contaminated aquatic foods.
- MEMA 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 Highway Department Districts 4 and 5
  - Coordinates Commonwealth traffic and access control equipment support.
  - Assists local public works departments to assure that roads remain passable.
- Massachusetts National Guard
  - Coordinates National Guard transportation resources.
  - Coordinates National Guard support for traffic and access control, and security for evacuated areas.
  - Supports MEMA Region II EOC operations.
- Massachusetts Red Cross
  - Coordinates Red Cross activities at mass care shelters.

<u>State of Rhode Island Agencies</u>

- 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.
- 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.
- 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.
- 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

- Jordan Hospital, 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 Nuclear Northeast (ENN), which is the corporate entity of PNPS, 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.
- 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.

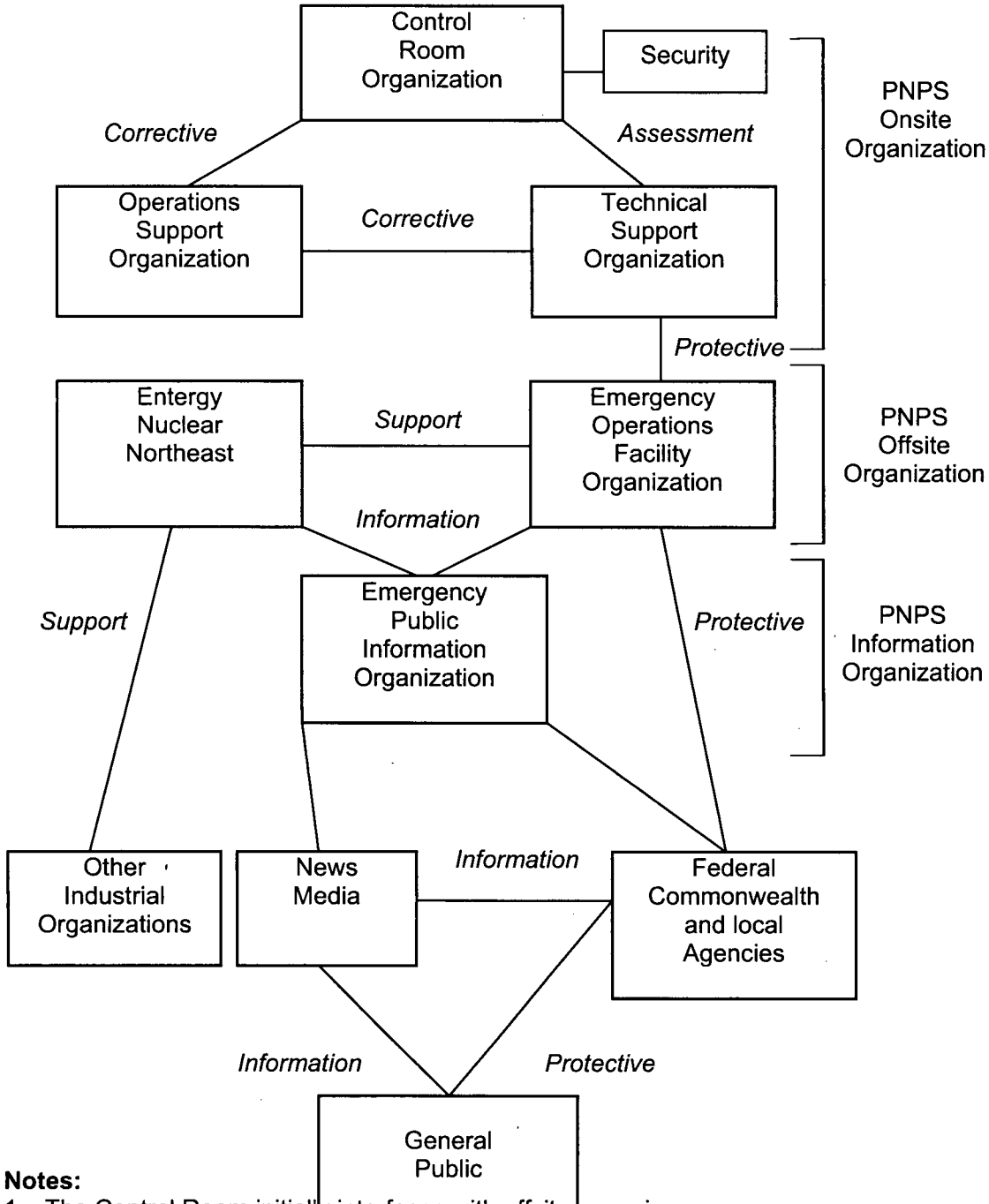
e. The PNPS Emergency Response Organization is composed of pre-designated Station personnel available and trained to augment the on-shift complement in an emergency. Procedures for training and maintenance of the emergency organization are in place to assure 24-hour per day staffing for emergency response. 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 Nuclear Safety Assurance 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.

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.

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 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 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.

   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.
      - 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.

   c. The EOF Manager is a senior member of Nuclear Assessment or designated alternate from PNPS 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 *Admin/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.

d. 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 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.

3. Succession to Emergency Director: Initially, the Shift Manager 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 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.

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, State, 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.
- 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 and EOF Technical Advisor and 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 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 responders 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 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 for maintenance of accountability for operations personnel dispatched into the plant during the emergency and the Maintenance Coordinator 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, Maintenance Coordinator, Emergency Plant Operations Supervisor, Rad/Chem Coordinator, TSC Security Coordinator and the Admin/Logistics Coordinator.

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

The Radiological Coordinator interfaces with the Technical Support Center Manager, the Operations Support Center Manager and the RadChem 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/Logistics Coordinator regarding security in the JIC. Initially, the Security Shift Commander performs the duties of the TSC Security Coordinator until relieved.

The TSC Security Coordinator interfaces with the Emergency Plant Operations Supervisor, the Operations Support Center Manager, the Technical Support Center Manager and the Admin/Logistics Coordinator, and the Emergency Director and 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 Nuclear Northeast 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.
- Ensure timely communications with local, Commonwealth, and federal agencies after activation of the EOF following emergency response activation.
- Coordinate obtaining additional support and resource from corporate through the ALC and from offsite through the ED.

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, local, Commonwealth, and State emergency organizations and distributing information and forms.

The Admin/Logistics Coordinator 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/Logistics Coordinator coordinates with the EOF Manager as necessary to obtain resources from Entergy Nuclear Northeast.

The Admin/Logistics Coordinator interfaces with the Technical Support Center Manager, the Operations Support Center Manager, 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 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.

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: The Entergy Nuclear Northeast office in White Plains, NY, 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:

   a. The Plymouth Fire Department has agreed to provide:

      - Fire protection assistance for the site.
      - Emergency ambulance service.
      - Rescue assistance to the public for the open areas of the site.
      - Storage of emergency equipment supplied by PNPS (back up breathing air compressor).

   b. The Plymouth Police Department has agreed to:

      - Control access on town roads in the vicinity of the site, including the erection of barricades on Rocky Hill Road if needed.
      - Initiate evacuation of the public from the site.
      - Provide offsite storage of emergency equipment.

   c. Jordan and Morton Memorial Hospitals have agreed to provide medical treatment to contaminated and injured personnel or radiation 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. American Medical Response Ambulance Service provides emergency ambulance service to PNPS through a contract with the Plymouth Fire Department. This includes the transport of contaminated and injured personnel or radiation injury victims.

   e. The Town of Carver has agreed to provide facilities for the PNPS Alternate Emergency Operations Facility.

   f. Bridgewater State College 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 Preparedness files. Letters of Agreement are renewed annually.

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

Functional Area	Major Task	Onshift Pos.No.	Position Title	Res-ponse
Plant Operations	Plant Stabilization	1	Shift Manager	On Shift#
Assessment of Operational Aspects	Accident Mitigation	2 3,4 5,6	Control Room Supervisor Lic. Nuc. Plant Operator (2) Unlic. Nuc. Plant Operator (2)***FB	On Shift# On Shift# On Shift#
Emergency Direction	Emergency Classification	(1)	Shift Manager	On Shift#
Emergency Control	PARs	(1)	Shift[k1] Manager Emergency Director Emergency Plant Ops Supv	On Shift# 60 min. 60 min.
Notification and Communications	Notification of PNPS, Local, Commonwealth, and Federal personnel and Maintain Communications	(1) 7	Shift Manager Unlic. Nuc. Plant Operator Offsite Communicator EOF Communicator ENS Communicator	On Shift# On Shift# 30 min. 60 min. 60 min.
Rad Accident Assessment	EOF Direction		EOF Manager	60 min.
Ops Accident Assessment Support	Offsite Dose Assessment	(8) (9)	RP Technician*** Radio Chem. Technician*** Radiological Assessment Coor	On Shift# On Shift# 30 min.
	Offsite Surveys		OMT Member (2) OMT Member (2)	30 min. 60 min.
	Onsite and In-plant Surveys	8	RP Technician RP Technician (2) RP Technician (2)	On Shift# 30 min. 60 min.
	Chemistry / Radiochemistry	9	Radio Chem. Technician Radio Chem. Technician	On Shift# 60 min.
Plant System Engineering	TSC / OSC Direction		Emergency Plant Manager	60 min.
Repair and Corrective Actions	Technical Support	10	Engineer (Shift Control Rm)* Engineer (Reactor) Engineer (Mechanical) Engineer (Electrical)	On Shift# 30 min. 60 min. 60 min.
	Equipment Repairs		Nuclear Maint. Technician	30 min.
	Corrective Actions	11 12	Nuclear Maint. Technician Unlic. Nuc. Plant Operator Nuc. Plant Reactor Operator***FB Nuc. Plant Reactor Operator Nuclear Maint. (Electrical)(2) Nuclear Maint. (Electrical) Nuclear Control Technician(2)	60 min. On Shift# On Shift# 60 min. 30 min. 60 min. 30 min.
Protective Actions (In Plant)	Radiation Protection, Access Control, RP Coverage, Personnel Monitoring, and Dosimetry	(8), (9)	RP Technician (2)*** RP Technician (2) RP Technician (2)	On Shift# 30 min. 60 min.
	Fire fighting	13, 14	Fire Brigade*, (3 ***, 2 [NLO or Sec]) 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 EMPs, RNs, First Responders, and Paramedics.

NOTES: Response times are based on optimum travel conditions.

On Shift Position #7 is Assistant to Offsite Communicator and can be replaced by anSRO that is qualified for the task.

On Shift Position #11 can be filled by an RO or SRO that is qualified for the task

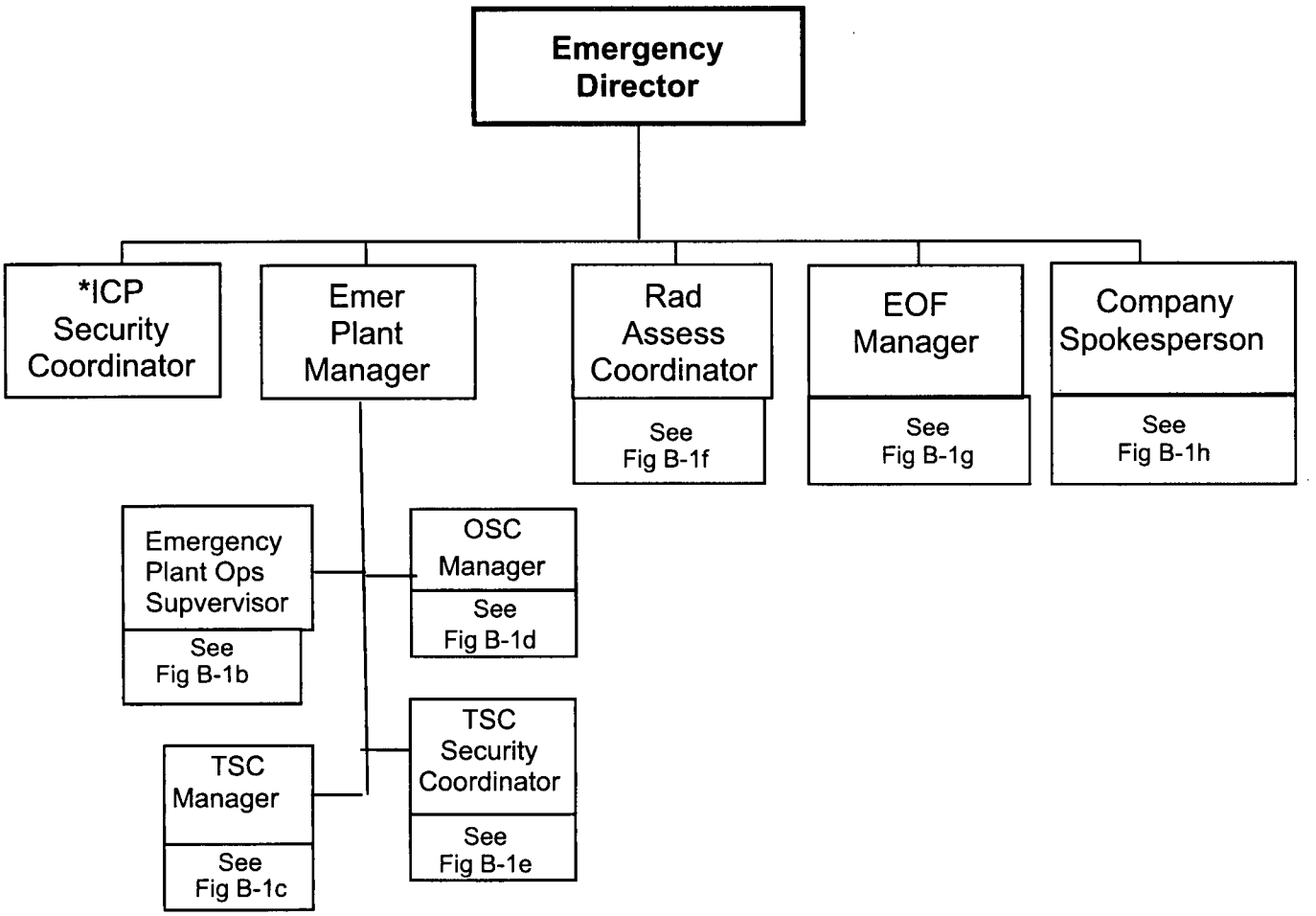
On Shift Positions #13 and #14 are available to support Shift Manager, where qualified, in non-fire events.

(1) 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

PNPS EMERGENCY PLAN

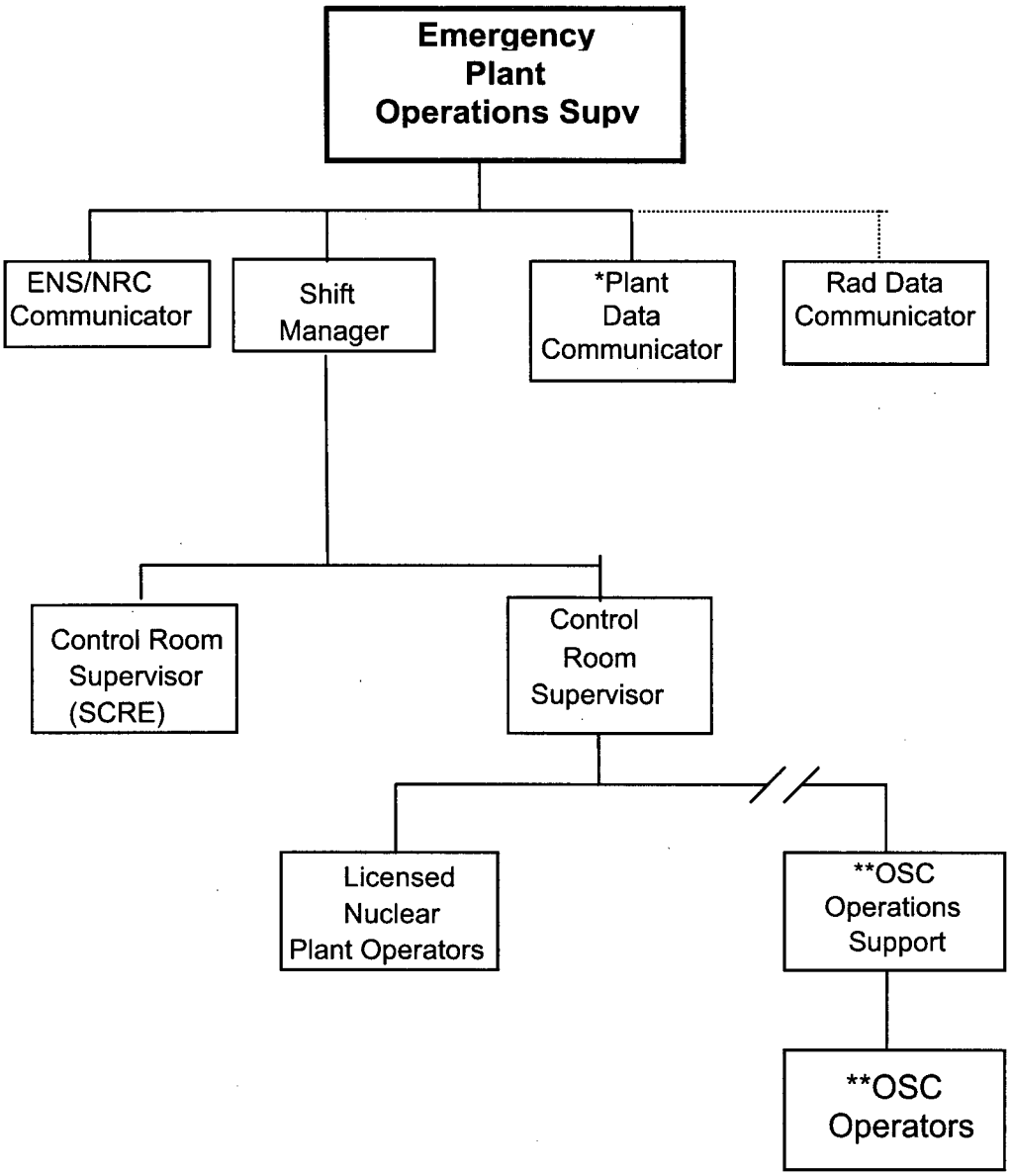
an in accordance with 10CFR50 Appendix E, Section IV. A. 9 and maintained as a separate document.

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



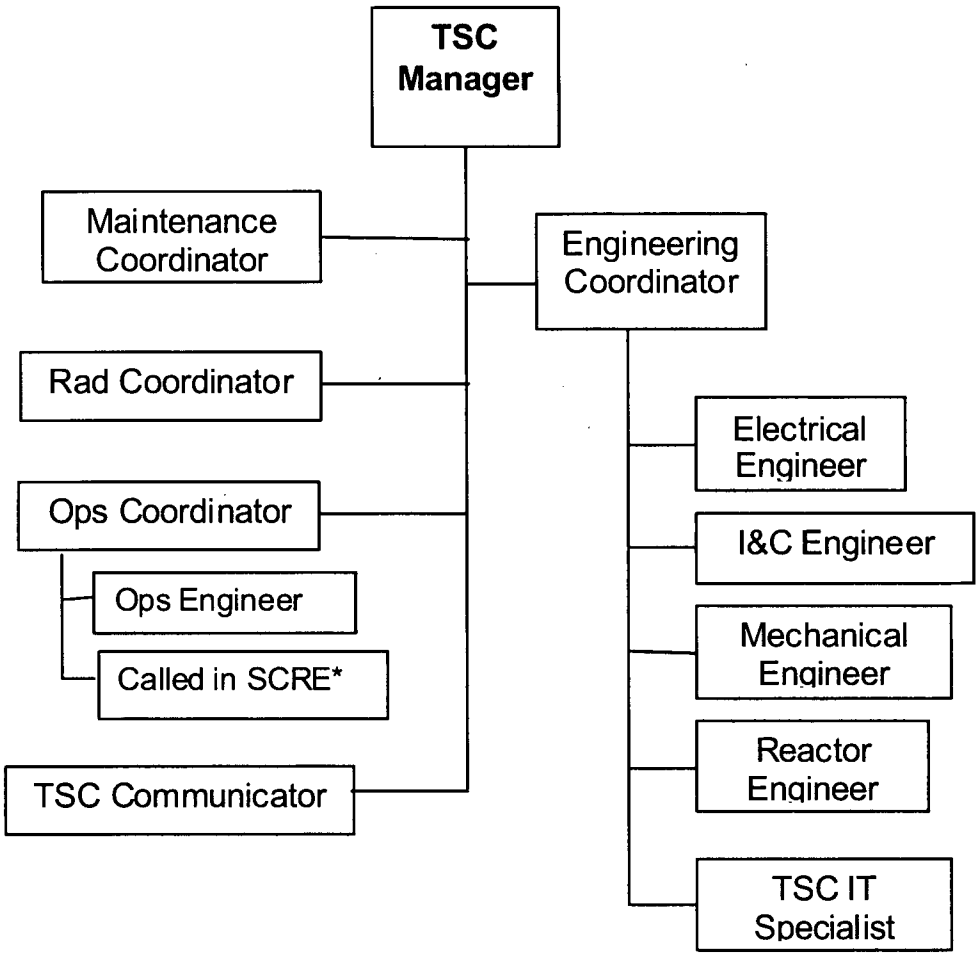
* Hostile Action Based Events Position

Figure B-1b: Operations Emergency Organization



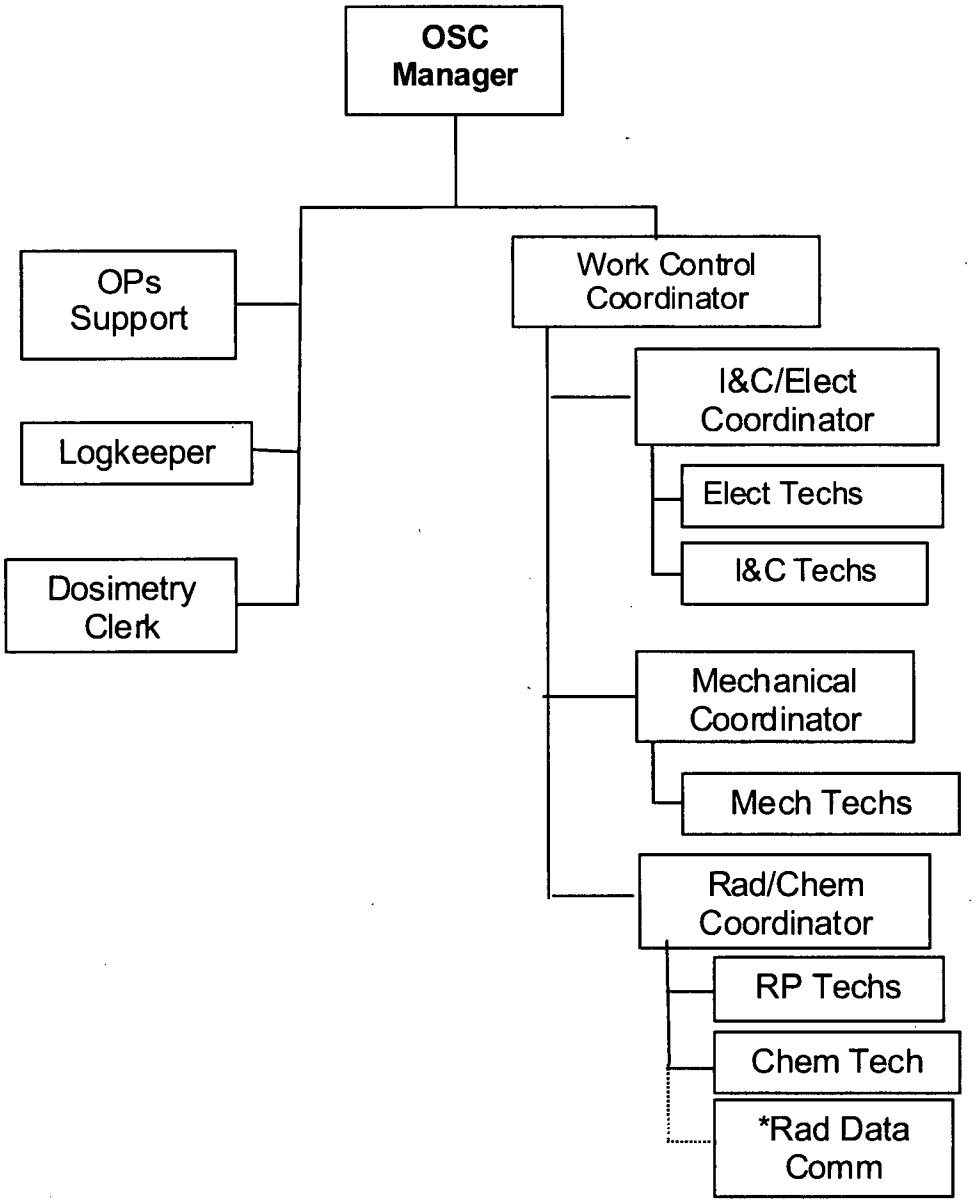
* Required if SPDS is inoperable
** Located in the OSC

Figure B-1c: Technical Support Organization



Additional Engineering personnel may be called in based on the nature of the event.
*SCRE: Control Room Supervisor (SCRE)

Figure B-1d: Operations Support Organization



* Rad Data Communicator only if SPDS is inoperable

Figure B-1e: Emergency Security Organization

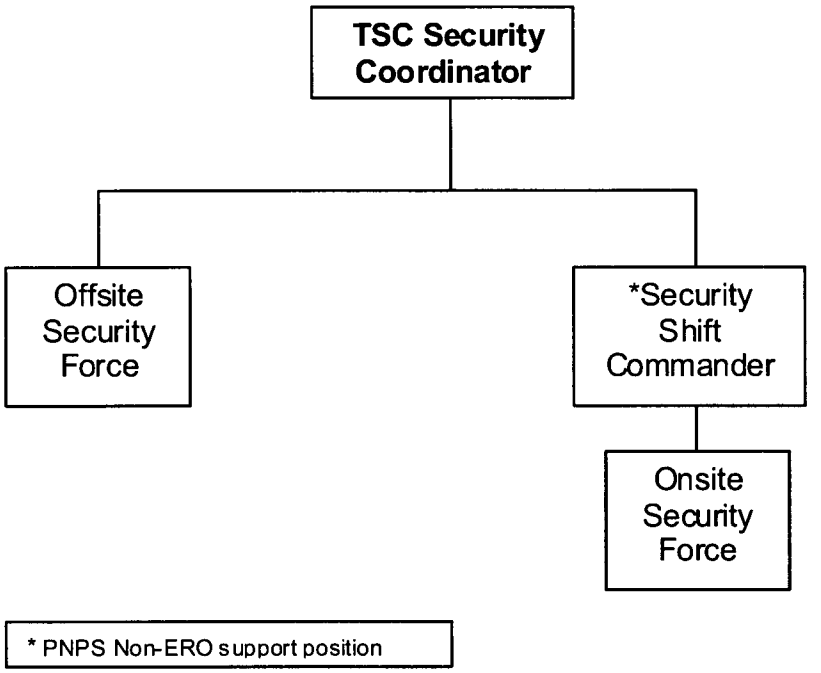
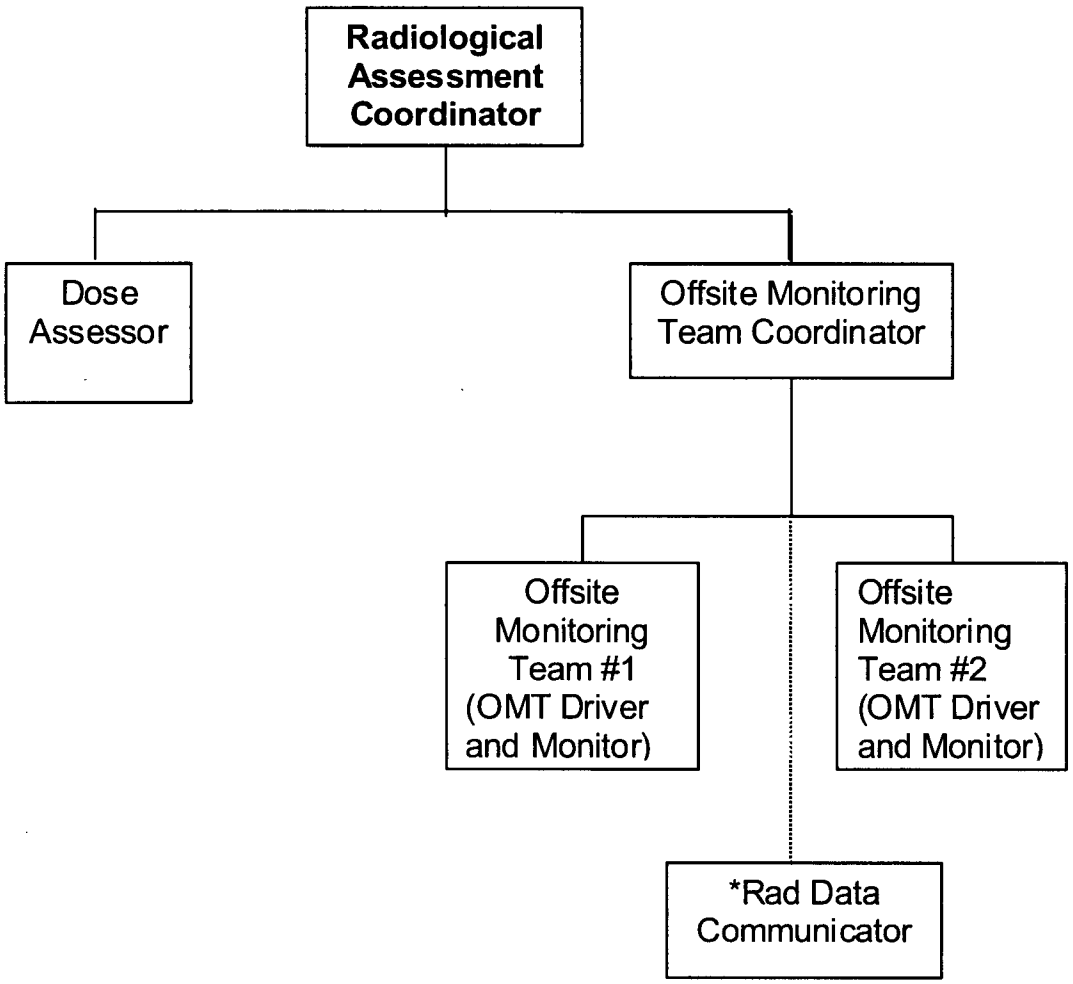
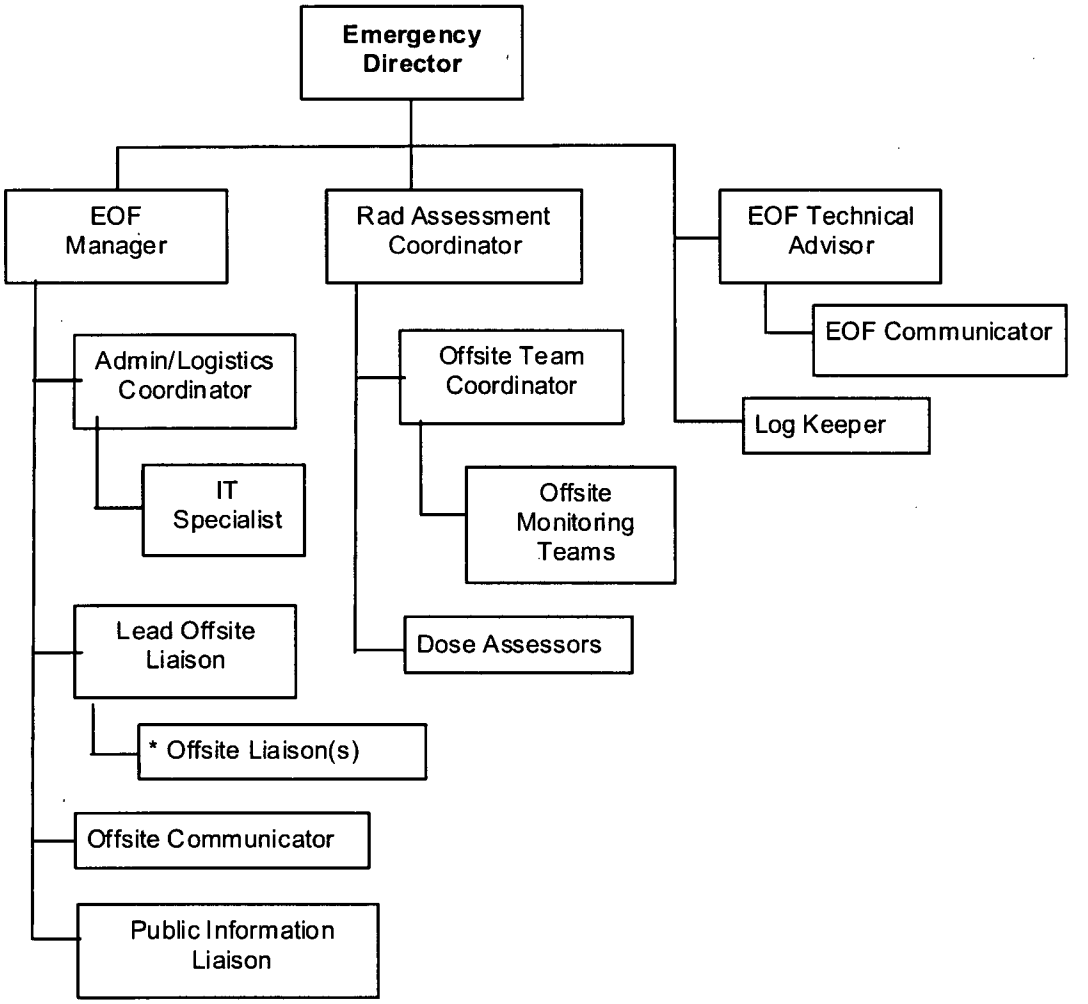


Figure B-1f: Offsite Radiological Assessment Organization



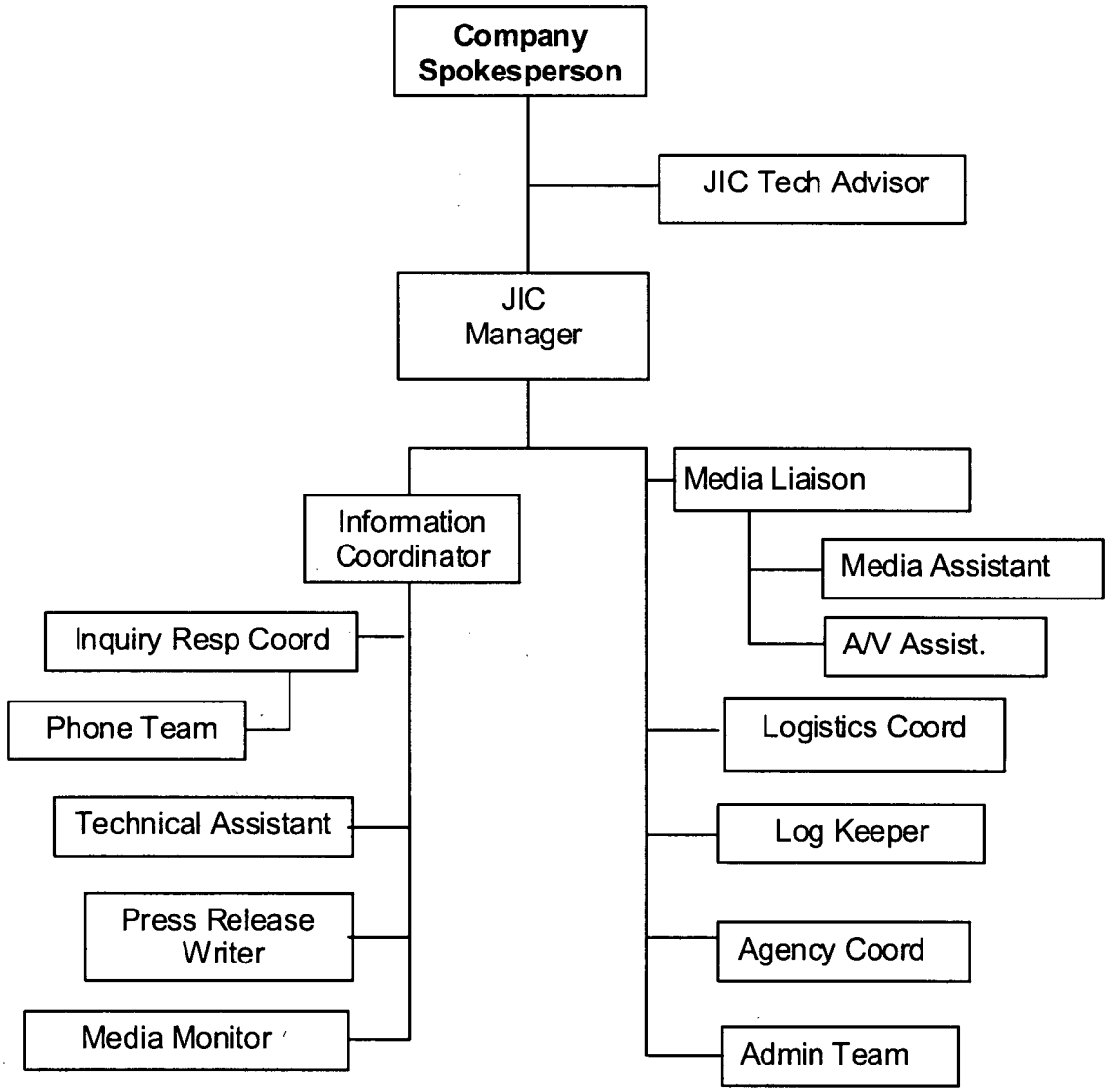
* Rad Data Communicator only if SPDS is inoperable

Figure B-1g: Emergency Operations Facility Organization



- Located at Commonwealth and Local EOCs

Figure B-1h: Emergency Public Information Organization


Company Spokesperson
JIC Tech Advisor
JIC Manager
Information Coordinator
Media Liaison
Media Assistant
A/V Assist.
Inquiry Resp Coord
Phone Team
Technical Assistant
Press Release Writer
Media Monitor
Logistics Coord
Log Keeper
Agency Coord
Admin Team

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 EOCs to act as communications liaisons and to provide clarification of emergency response information.

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 Operation (INPO) is able to provide:

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

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

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

- 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 Nuclear Northeast (ENN).
- 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, State, and Local) within 8 hours.

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, 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.

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, State, 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. In addition, the Emergency Action Levels reflect elements provided in NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security Based Events", that include a hostile action based perspective for response to security-related threats and events.

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.

Modes: 1 Run, 2 Startup, 3 Hot Shutdown, 4 Cold Shutdown, 5 Refuel, DEF Defueled

A – Abnormal Rad Release / Rad Effluent

	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
1 Offsite Rad Conditions	AG1.1 [1 2 3 4 5 DEF] Valid Main Stack High Range Effluent Monitor (RI-1001-608) reading > Table A-1 column "GE" for ≥ 15 min (Note 1) AG1.2 [1 2 3 4 5 DEF] Dose assessment using actual meteorology indicates doses > 1,000 mrem TEDE or > 5,000 mrem thyroid CDE at or beyond the site boundary AG1.3 [1 2 3 4 5 DEF] Field survey results indicate closed window dose rates > 1,000 mR/hr expected to continue for ≥ 1 hr at or beyond the site boundary OR Analyses of field survey samples indicate thyroid CDE > 5,000 mrem for 1 hr of inhalation at or beyond the site boundary	AS1.1 [1 2 3 4 5 DEF] Valid Main Stack High Range Effluent Monitor (RI-1001-608) reading > Table A-1 column "SAE" for ≥ 15 min. (Note 1) AS1.2 [1 2 3 4 5 DEF] Dose assessment using actual meteorology indicates doses > 100 mrem TEDE or > 500 mrem thyroid CDE at or beyond the site boundary AS1.3 [1 2 3 4 5 DEF] Field survey indicates closed window dose rate > 100 mR/hr expected to continue for ≥ 1 hr at or beyond the site boundary OR Field survey sample analysis indicates thyroid CDE > 500 mrem for 1 hr of inhalation at or beyond the site boundary	AA1.1 [1 2 3 4 5 DEF] Any valid gaseous monitor reading > Table A-1 column "Alert" for ≥ 15 min. (Note 2) AA1.2 [1 2 3 4 5 DEF] Valid radwaste effluent radiation monitor RM-1705-30 (Panel C910) reading > Table A-1 column "Alert" for ≥ 15 min. (Note 2) AND Radwaste discharge is not isolated AA1.3 [1 2 3 4 5 DEF] Confirmed sample analyses for gaseous or liquid releases indicate concentrations or release rates > 200 x ODCM limits for ≥ 15 min (Note 2)	AU1.1 [1 2 3 4 5 DEF] Any valid gaseous monitor reading > Table A-1 column "UE" for ≥ 60 min (Note 2) AU1.2 [1 2 3 4 5 DEF] Valid radwaste effluent radiation monitor RM-1705-30 (Panel C910) reading > Table A-1 column "UE" for ≥ 60 min. (Note 2) AND Radwaste discharge is not isolated AU1.3 [1 2 3 4 5 DEF] Confirmed sample analyses for gaseous or liquid releases indicate concentrations or release rates > 2 x ODCM limits for ≥ 60 min (Note 2)
2 Onsite Rad Conditions & Spent Fuel Pool Events			AA2.1 [1 2 3 4 5 DEF] Damage to irradiated fuel OR loss of water level (uncovering irradiated fuel outside the RPV) that causes a valid high alarm on any of the following radiation monitors (Panel C910/C911): - New Fuel Vault (RIS-1815-3D) - Refuel Floor Shield Plug Area (RIS-1815-3E) - Spent Fuel Pool Area (RIS-1815-3F) - Refuel Floor Vent Exhaust (RIS-1705-8A-D) AA2.2 [1 2 3 4 5 DEF] A water level drop in the reactor cavity or spent fuel pool that will result in irradiated fuel becoming uncovered	AU2.1 [1 2 3 4 5 DEF] Unplanned low water level or alarm indicating uncontrolled water level decrease in the reactor cavity or spent fuel pool with all irradiated fuel assemblies remaining covered by water AND Valid area radiation monitor reading increases rise on ANY of the following - New Fuel Vault (RIS-1815-3D) - Refuel Floor Shield Plug Area (RIS-1815-3E) - Spent Fuel Pool Area (RIS-1815-3F) AU2.2 [1 2 3 4 5 DEF] Unplanned valid area radiation monitor reading or survey results rise by a factor of 1000 over normal levels* (* normal levels can be considered as the highest reading in the past 24 hours excluding the current peak value)
3 MCR/CAS Radiation			AA3.1 [1 2 3 4 5 DEF] Dose rates > 15 mR/hr in EITHER of the following areas requiring continuous occupancy to maintain plant safety functions: Main Control Room (RIS-1815-2A, Panel C911) OR CAS (by survey)	

Note 1 The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition will likely exceed the applicable time. If dose assessment results are available declaration should be based on dose assessment instead of radiation monitor values. (See EAL AS1.2/AG1.2) Do not delay declaration pending dose assessment results.

Note 2 The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the release duration has exceeded, or will likely exceed, the applicable time. In the absence of data to the contrary, assume that the release duration has exceeded the applicable time if an ongoing release is detected and the release start time is unknown.

Table A-1 Effluent Monitor Classification Thresholds

	Release Point	Monitor	GE for ≥ 15 min.	SAE for ≥ 15 min.	ALERT for ≥ 15 min.	UE for ≥ 60 min.
GASEOUS	Stack Gas	RM-1705-18A/B (Panel C910 - units of cps) Low Range	—	—	4E+5 cps	2E+4 cps
GASEOUS	Stack Gas	RI-1001-608 (Panel C170 - units of R/hr) High Range	20 R/hr	2 R/hr	—	—
GASEOUS	Rx Bldg Vent Exhaust	RM-1705-32A/B (Panel C910 - units of cps)	—	—	1E+5 cps	1E+3 cps
LIQUID	Radwaste Discharge Effluent	RM-1705-30 (Panel C910 - units of cps)	—	—	200 x hi-hi alarm* not to exceed 8E+5 cps	2 x hi-hi alarm*

* with Radwaste discharge not isolated

H – Hazards

	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
1 Natural or Destructive Phenomena	None	None	HA1.1 [1 2 3 4 5 DEF] Seismic event identified by any two of the following - "SEISMIC RECORDER OPERATING" (C903R-B1) alarm - Earthquake felt in plant - National Earthquake Information Center AND EITHER Ground motion > Operating Basis Earthquake (0.08 g) per analyses OR Control Room indication of degraded performance of systems required for the safe shutdown of the plant HA1.2 [1 2 3 4 5 DEF] Tornado or sustained high winds > 105 mph within Protected Area boundary resulting in visible damage to any Table H-1 plant structures / equipment or Control Room indication of degraded performance of safety systems HA1.3 [1 2 3 4 5 DEF] Vehicle crash resulting in visible damage to any Table H-1 plant structures or equipment or Control Room indication of degraded performance of safety systems HA1.4 [1 2 3 4 5 DEF] Turbine failure-generated missiles result in any visible damage to or penetration of any Table H-1 area or Control Room indication of degraded performance of safety systems HA1.5 [1 2 3 4 5 DEF] Flooding in any Table H-2 area that results in degraded safety system performance as indicated in the Control Room or that creates industrial safety hazards (e.g., electric shock) that precludes access necessary to operate or monitor safety equipment HA1.6 [1 2 3 4 5 DEF] Sea water bay water level > +16' 0" MSL (LI-3831A/B) OR Sea water bay water level < -16' 0" MSL (LI-3831A/B)	HU1.1 [1 2 3 4 5 DEF] Seismic event identified by any two of the following - "SEISMIC RECORDER OPERATING" (C903R-B1) alarm - Earthquake felt in plant - National Earthquake Information Center HU1.2 [1 2 3 4 5 DEF] Tornado striking within Protected Area boundary OR Sustained high winds > 105 mph HU1.3 [1 2 3 4 5 DEF] Turbine failure resulting in casing penetration or damage to turbine or generator seals HU1.4 [1 2 3 4 5 DEF] Flooding in any Table H-2 area that has the potential to affect safety-related equipment needed for the current operating mode HU1.5 [1 2 3 4 5 DEF] Sea water bay water level > +13' 6" MSL (LI-3831A/B) OR Sea water bay water level < -13' 9" MSL (LI-3831A/B)
2 Fire or Explosion	None	None	HA2.1 [1 2 3 4 5 DEF] Fire or explosion resulting in visible damage to any Table H-1 area containing safety systems or components or Control Room indication of degraded performance of safety systems	HU2.1 [1 2 3 4 5 DEF] Fire not extinguished within 15 min of control room notification or verification of a control room fire alarm in any Table H-1 Area (Note 3) HU2.2 [1 2 3 4 5 DEF] Explosion within the Protected Area
3 Hazardous Gas	None	(Note 8)	HA3.1 [1 2 3 4 5 DEF] Access to any Table H-1 area is prohibited due to toxic, corrosive, asphyxiant or flammable gases which jeopardize operation of systems required to maintain safe operations or safely shut down the reactor (Note 8)	HU3.1 [1 2 3 4 5 DEF] Toxic, corrosive, asphyxiant or flammable gases in amounts that have or could adversely affect normal plant operations HU3.2 [1 2 3 4 5 DEF] Recommendation by local, county or state officials to evacuate or shelter site personnel based on offsite event
4 Security	HG4.1 [1 2 3 4 5 DEF] A hostile action has occurred such that plant personnel are unable to operate equipment required to maintain safety functions OR A hostile action has caused failure of Spent Fuel Cooling Systems and imminent fuel damage is likely for recently irradiated fuel (fuel has decayed < 24 hrs since reactor shutdown)	HS4.1 [1 2 3 4 5 DEF] A hostile action is occurring or has occurred within the Protected Area as reported by the Station Security Force	HA4.1 [1 2 3 4 5 DEF] A hostile action is occurring or has occurred within the Owner Controlled Area as reported by the Station Security Force OR A validated notification from NRC of an airliner attack threat within 30 min. of the site	HU4.1 [1 2 3 4 5 DEF] A security condition that does not involve a hostile action as reported by the Station Security Force OR A credible site-specific security threat notification OR A validated notification from NRC providing information of an aircraft threat
5 Control Room Evacuation	None	HS5.1 [1 2 3 4 5 DEF] Control Room evacuation has been initiated AND Control of the plant cannot be established within 15 min	HA5.1 [1 2 3 4 5 DEF] PNPS 2.4.143 "Shutdown from Outside Control Room" requires Control Room evacuation	None
6 Judgment	HG6.1 [1 2 3 4 5 DEF] Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve EITHER: 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 (1,000 mrem TEDE and 5,000 mrem thyroid CDE) beyond the site boundary	HS6.1 [1 2 3 4 5 DEF] Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve EITHER: 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 (1,000 mrem TEDE and 5,000 mrem thyroid CDE) beyond the site boundary	HA6.1 [1 2 3 4 5 DEF] Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve EITHER: 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 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 (1,000 mrem TEDE and 5,000 mrem thyroid CDE)	HU6.1 [1 2 3 4 5 DEF] Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which indicate EITHER: A potential degradation of the level of safety of the plant OR A security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs

Table H-2 Internal Flooding Areas

- Reactor Building
- Rx Closed Cooling Water System Auxiliary Bays
- Turbine Building
- Diesel Generator Rooms
- Salt Service Water Bays
- Radwaste Area

Table H-1 Safe Shutdown Areas

- Reactor Building
- Control Room
- Cable Spreading Room
- 4160 Switchgear Rooms
- Diesel Generator Rooms
- Salt Service Water Bays
- Rx Closed Cooling Water System Auxiliary Bays
- Standby Gas Treatment Area, 51' Level, Turbine Bldg
- Condensate Storage Tank

Note 8 If the equipment in the stated area was already inoperable, or out of service, before the event occurred, then the EAL should not be declared as it will have no adverse impact on the ability of the plant to safely operate or safely shutdown beyond that already allowed by Technical Specifications at the time of the event.

S – System Malfunction

	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
1 Loss of AC Power	SG1.1 [1 2 3] Loss of all offsite and all onsite AC power (Table S-3) to emergency Buses A5 and A6 AND EITHER: Restoration of at least one emergency bus in < 4 hours is not likely OR RPV level cannot be restored and maintained > -125 in. or cannot be determined	SS1.1 [1 2 3] Loss of all offsite and all onsite AC power (Table S-3) to emergency Buses A5 and A6 for ≥ 15 min (Note 3)	SA1.1 [1 2 3] AC power capability to emergency Buses A5 and A6 reduced to a single power source (Table S-3) for ≥ 15 min. such that any additional single failure would result in loss of all AC power to emergency buses (Note 3)	SU1.1 [1 2 3] Loss of all offsite AC power (Table S-3) to emergency Buses A5 and A6 for ≥ 15 min. (Note 3)
2 ATWS Criticality	SG2.1 [1 2] An automatic scram failed to shutdown the reactor (reactor power < 3%) AND All manual actions do not shutdown the reactor as indicated by reactor power ≥ 3% AND EITHER of the following exist or have occurred due to continued power generation: RPV level cannot be restored and maintained > -150 in. or cannot be determined OR Torus water temperature and RPV pressure cannot be maintained below Heat Capacity Temperature Limit (EOP-11 Figure 2)	SS2.1 [1 2] An automatic scram failed to shutdown the reactor (reactor power < 3%) AND Manual actions taken at the reactor control console do not shutdown the reactor as indicated by reactor power ≥ 3% (Note 6)	SA2.1 [1 2] An automatic scram failed to shutdown the reactor (reactor power < 3%) AND Manual actions taken at the reactor control console successfully shutdown the reactor as indicated by reactor power < 3% (APRM downscale) (Note 6)	SU2.1 [2 3] Unplanned sustained positive period observed on nuclear instrumentation
3 Inability to Reach Shutdown Conditions	None	None	None	SU3.1 [1 2 3] Plant is not brought to required operating mode within Technical Specifications LCO action statement time
4 Inst. / Comm.	None	SS4.1 [1 2 3] Loss of > approximately 75% of the annunciators or indicators associated with safety systems on MCR Panels C903, C904, C905, C-1, C-3, C170 and C171 for ≥ 15 min. (Note 3) AND Any significant transient is in progress, Table S-1 AND Compensatory non-alarming indications are unavailable	SA4.1 [1 2 3] Unplanned loss of > approximately 75% of annunciators or indicators associated with safety systems on MCR Panels C903, C904, C905, C-1, C-3, C170 and C171 for ≥ 15 min (Note 3) AND EITHER: Any significant transient is in progress, Table S-1 OR Compensatory indications are unavailable	SU4.1 [1 2 3] Unplanned loss of > approximately 75% of annunciators or indicators associated with safety systems on MCR Panels C903, C904, C905, C-1, C-3, C170 and C171 for ≥ 15 min (Note 3) SU4.2 [1 2 3] Loss of all Table S-2 onsite (internal) communication methods affecting the ability to perform routine operations OR Loss of all Table S-2 offsite (external) communication methods affecting the ability to perform offsite notifications
5 Fuel Clad Degradation	None	None	None	SU5.1 [1 2 3] Air Ejector Off Gas radiation monitor RM-1705-3A and B (Panel C910) reading > Hi-Hi alarm for > 13 min. SU5.2 [1 2 3] Reactor coolant system sample activity > 20 μCi/ml total iodine
6 RCS Leakage	None	None	(Note 7)	SU6.1 [1 2 3] Unidentified or pressure boundary leakage > 10 gpm OR Identified leakage > 25 gpm (Note 7)
7 Loss of DC Power	None	SS7.1 [1 2 3] < 105 VDC bus voltage indications on all essential 125 VDC buses (Panels D16 and D17) for ≥ 15 min. (Note 3)	None	None

F – Fission Product Barriers

	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
F	FG1.1 [1 2 3] Loss of any two barriers AND Loss or potential loss of third barrier (Table F-1)	FS1.1 [1 2 3] Loss or potential loss of any two barriers (Table F-1)	FA1.1 [1 2 3] Any loss or any potential loss of either Fuel Clad or RCS (Table F-1)	FU1.1 [1 2 3] Any loss or any potential loss of Primary Containment (Table F-1)

Table F-1 Fission Product Barrier Matrix

	Fuel Clad Barrier – Loss	Fuel Clad Barrier – Potential Loss	Reactor Coolant System Barrier – Loss	Reactor Coolant System Barrier – Potential Loss	Primary Containment Barrier – Loss	Primary Containment Barrier – Potential Loss
A. RPV Level	1. Primary Containment Flooding required due to EITHER: RPV water level cannot be restored and maintained above -150 in. (MSCRWL) OR RPV water level cannot be determined and core damage is occurring	5. RPV level cannot be restored and maintained > -125 in. or cannot be determined	7. RPV level cannot be restored and maintained > -125 in or cannot be determined	None	None	22. SAG entry required
B. PC Pressure / Temperature	None	None	8. PC pressure > 2.2 psig due to RCS leakage	None	16. PC pressure rise followed by a rapid unexplained drop in PC pressure 17. PC pressure response not consistent with LOCA conditions	23. Torus bottom pressure > 60 psig and rising 24. Deflagration concentrations exist inside PC 25. Torus water temperature and RPV pressure cannot be maintained below Heat Capacity Temperature Limit (EOP-11 Figure 2)
C. Isolation	None	None	9. Release pathway exists outside primary containment resulting from isolation failure in any of the following (excluding normal process system flowpaths from an unisolable system): - Main steam line - HPCI steam line - RCIC steam line - RWCU - Feedwater 10. Emergency RPV depressurization required	13. RCS leakage > 50 gpm inside the drywell 14. Unisolable primary system discharge outside primary containment AND A valid entry condition to EOP-4 exists due to Secondary Containment area radiation or temperature above any Maximum Normal Operating Value (EOP-4, Table H)	18. Failure of any valve in any one line to close AND Direct downstream pathway to the environment exists after PC isolation signal 19. Intentional PC venting per EOPs 20. Unisolable primary system discharge outside PC resulting in Secondary Containment area radiation or temperature above any Maximum Safe Operating Value (EOP-4, Table L)	None
D. Rad	2. Drywell High Range Area Radiation Monitor (RIT-1001-606A and B) > 800 R/hr OR Torus High Range Area Radiation Monitor (RIT-1001-607A and B) > 50 R/hr 3. Primary coolant activity > 300 μCi/gm I-131 dose equivalent	None	11. Drywell High Range Area Radiation Monitor (RIT-1001-606A and B) > 85 R/hr OR Torus High Range Area Radiation Monitor (RIT-1001-607A and B) > 4 R/hr	None	None	26. Drywell High Range Area Radiation Monitor (RIT-1001-606A and B) > 8,000 R/hr OR Torus High Range Area Radiation Monitor (RIT-1001-607A and B) > 500 R/hr
E. Judgment	4. Any condition in the opinion of the Emergency Director that indicates loss of the Fuel Clad barrier	6. Any condition in the opinion of the Emergency Director that indicates potential loss of the Fuel Clad barrier	12. Any condition in the opinion of the Emergency Director that indicates loss of the RCS barrier	15. Any condition in the opinion of the Emergency Director that indicates potential loss of the RCS barrier	21. Any condition in the opinion of the Emergency Director that indicates loss of the PC barrier	27. Any condition in the opinion of the Emergency Director that indicates potential loss of the PC barrier

Table S-1 Significant Transients

- Reactor scram
- Runback > 25% thermal power
- Electrical load rejection > 25% full electrical load
- ECCS injection
- Thermal power oscillations > 10%

Table S-2 Communications Systems

System	Onsite (internal)	Offsite (external)
Plant Telephone System (CENTREX)	X	X
Wireless Telephone System	X	X
Pilgrim Station Radio System	X	
Plant Gaitronics System	X	
Alternate Shutdown Communication	X	
NRC-ENS Telephone, Direct Line		X
Satellite phones		X

Table S-3 AC Power Sources

Offsite
- Startup Transformer (X4)
- Shutdown Transformer
- UAT
- Backfeed via Main Transformer (only if already established)

Onsite
- EDG A
- EDG B
- SBO DG

Note 3. The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition will likely exceed the applicable time.

Note 6 Manual scram actions taken at the reactor control consoles are the following: - Reactor Scram push buttons - Reactor Mode Switch in SHUTDOWN - ATWS-ARI push buttons

Note 7 See Table F-1 Fission Product Barrier Matrix for possible escalation above the Unusual Event due to RCS Leakage

EAL Identifier

XXX.X
- Category (A, H, S, F, C)
- Emergency classification (G, S, A, U)
- Subcategory number (1 if no subcategory)
- Sequential number within subcategory/classification

HOT CONDITIONS

Note 1 The Emergency Director should not wait until the applicable time frame has elapsed, but should declare the event as soon as it is determined that the condition will most likely exceed the applicable time. If dose assessment results are available declaration should be based on dose assessment instead of radiation monitor values (See EAL AS1.2/AG1.2). Do not delay declaration awaiting dose assessment results

Note 2 The Emergency Director should not wait until the applicable time frame has elapsed but should declare the event as soon as it is determined that the release duration has exceeded or will likely exceed the applicable time. In the absence of data to the contrary assume the the release duration has exceeded the applicable time if an ongoing release is detected and the release start time is unknown

Note 3 The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it has been determined that the condition will likely exceed the applicable time limit

Note 4 Containment Closure is the action taken to secure primary or secondary containment and its associated structures, systems and components as a functional barrier to fission product release under existing plant conditions. Containment Closure is established when the Primary or Secondary Containment Integrity is established per section 3.7 of Technical Specifications

Note 5 ILRT, CRD scram time testing and hydrostatic testing in which the RCS temperature is intentionally raised above 212 F per Technical Specification LCO 3.14 are not applicable to these EALs

Note 6 Manual scram actions taken at the reactor control consoles are the following
- Reactor Scram push buttons
- Reactor Mode Switch in SHUTDOWN
- ATWS-ARI push buttons

Note 7 See Table F-1 Fission Product Barrier Matrix for possible escalation above the Unusual Event due to RCS Leakage

Note 8 If the equipment in the stated area was already inoperable or out of service before the event occured then the EAL should not be declared as it will have no adverse impact on the ability of the plant to safely operate or safely shutdown beyond the already allowed by Technical Specifications at the time of the event

A — Abnorm. Rad Release / Rad Effluent

Subcategory	General Emergency	Site Area Emergency	Alert	Unusual Event
1 Offsite Rad Conditions	AG1.1 [1 2 3 4 5 DEF] Valid Main Stack High Range Effluent Monitor (RI-1001-606) reading > Table A-1 column "GE" for ≥ 15 min (Note 1) AG1.2 [1 2 3 4 5 DEF] Dose assessment using actual meteorology indicates doses > 1,000 mrem TEDE or > 5,000 mrem thyroid CDE at or beyond the site boundary AG1.3 [1 2 3 4 5 DEF] Field survey results indicate closed window dose rates > 1,000 mR/hr expected to continue for ≥ 1 hr at or beyond the site boundary OR Analyses of field survey samples indicate thyroid CDE > 5,000 mrem for 1 hr of inhalation at or beyond the site boundary	AS1.1 [1 2 3 4 5 DEF] Valid Main Stack High Range Effluent Monitor (RI-1001-606) reading > Table A-1 column "SAE" for ≥ 15 min (Note 1) AS1.2 [1 2 3 4 5 DEF] Dose assessment using actual meteorology indicates doses > 100 mrem TEDE or > 500 mrem thyroid CDE at or beyond the site boundary AS1.3 [1 2 3 4 5 DEF] Field survey indicates closed window dose rate > 100 mR/hr expected to continue for ≥ 1 hr at or beyond the site boundary OR Field survey sample analysis indicates thyroid CDE > 500 mrem for 1 hr of inhalation at or beyond the site boundary	AA1.1 [1 2 3 4 5 DEF] Any valid gaseous monitor reading > Table A-1 column "Alert" for ≥ 15 min (Note 2) AA1.2 [1 2 3 4 5 DEF] Valid radwaste effluent radiation monitor RM-1705-30 (Panel C910) reading > Table A-1 column "Alert" for ≥ 15 min (Note 2) AND Radwaste discharge is not isolated AA1.3 [1 2 3 4 5 DEF] Confirmed sample analyses for gaseous or liquid releases indicate concentrations or release rates > 200 x ODCM limits for ≥ 15 min. (Note 2)	AU1.1 [1 2 3 4 5 DEF] Any valid gaseous monitor reading > Table A-1 column "UE" for ≥ 60 min. (Note 2) AU1.2 [1 2 3 4 5 DEF] Valid radwaste effluent radiation monitor RM-1705-30 (Panel C910) reading > Table A-1 column "UE" for ≥ 60 min (Note 2) AND Radwaste discharge is not isolated AU1.3 [1 2 3 4 5 DEF] Confirmed sample analyses for gaseous or liquid releases indicate concentrations or release rates > 2 x ODCM limits for ≥ 60 min. (Note 2)
2 Onsite Rad Conditions & Spent Fuel Pool Events	(Table A-1)	(Table A-1)	AA2.1 [1 2 3 4 5 DEF] Damage to irradiated fuel OR loss of water level (uncovering irradiated fuel outside the RPV) that causes a valid high alarm on any of the following radiation monitors (Panel C910/C911): - New Fuel Vault (RIS-1815-3D) - Refuel Floor Shield Plug Area (RIS-1815-3E) - Spent Fuel Pool Area (RIS-1815-3F) - Refuel Floor Vent Exhaust (RIS-1705-8A-D) AA2.2 [1 2 3 4 5 DEF] A water level drop in the reactor cavity or spent fuel pool that will result in irradiated fuel becoming uncovered	AU2.1 [1 2 3 4 5 DEF] Unplanned low water level or alarm indicating uncontrolled water level decrease in the reactor cavity or spent fuel pool with all irradiated fuel assemblies remaining covered by water AND Valid area radiation monitor reading increases rise on ANY of the following - New Fuel Vault (RIS-1815-3D) - Refuel Floor Shield Plug Area (RIS-1815-3E) - Spent Fuel Pool Area (RIS-1815-3F) AU2.2 [1 2 3 4 5 DEF] Unplanned valid area radiation monitor reading or survey results rise by a factor of 1000 over normal levels* * Normal levels can be considered as the highest reading in the past 24 hours excluding the current peak value
3 HCR/CAS Radiation			AA3.1 [1 2 3 4 5 DEF] Dose rates > 15 mR/hr in EITHER of the following areas requiring continuous occupancy to maintain plant safety functions Main Control Room (RIS-1815-2A, Panel C911) OR CAS (by survey)	

Note 1 The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition will likely exceed the applicable time. If dose assessment results are available, declaration should be based on dose assessment instead of radiation monitor values. (See EAL AS1.2/AG1.2) Do not delay declaration awaiting dose assessment results

Note 2 The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the release duration has exceeded, or will likely exceed, the applicable time. In the absence of data to the contrary, assume that the release duration has exceeded the applicable time if an ongoing release is detected and the release start time is unknown

Table A-1 Effluent Monitor Classification Thresholds

	Release Point	Monitor	GE for ≥ 15 min.	SAE for ≥ 15 min	ALERT for ≥ 15 min	UE for ≥ 60 min
GASEOUS	Stack Gas	RM-1705-18A/B (Panel C910 - units of cps) Low Range	—	—	4E+5 cps	2E+4 cps
GASEOUS	Stack Gas	RI-1001-606 (Panel C170 - units of R/hr) High Range	20 R/hr	2 R/hr	—	—
GASEOUS	Rx Bldg Vent Exhaust	RM-1705-32A/B (Panel C910 - units of cps)	—	—	1E+5 cps	1E+3 cps
LIQUID	Radwaste Discharge Effluent	RM-1705-30 (Panel C910 - units of cps)	—	—	200 x hi-hi alarm* not to exceed 8E+5 cps	2 x hi-hi alarm*

* with Radwaste discharge not isolated

H — Hazards

Subcategory	General Emergency	Site Area Emergency	Alert	Unusual Event
1 Natural or Destructive Phenomena	None	None	HA1.1 [1 2 3 4 5 DEF] Seismic event identified by any two of the following • "SEISMIC RECORDER OPERATING" (C903R-B1) alarm • Earthquake felt in plant • National Earthquake Information Center AND EITHER Ground motion > Operating Basis Earthquake (0.08 g) per analysis OR Control Room indication of degraded performance of systems required for the safe shutdown of the plant HA1.2 [1 2 3 4 5 DEF] Tornado or sustained high winds > 105 mph within Protected Area boundary resulting in visible damage to any Table H-1 plant structures / equipment or Control Room indication of degraded performance of safety systems HA1.3 [1 2 3 4 5 DEF] Vehicle crash resulting in visible damage to any Table H-1 plant structures or equipment or Control Room indication of degraded performance of safety systems HA1.4 [1 2 3 4 5 DEF] Turbine failure-generated missiles result in any visible damage to or penetration of any Table H-1 area or Control Room indication of degraded performance of safety systems HA1.5 [1 2 3 4 5 DEF] Flooding in any Table H-2 area that results in degraded safety system performance as indicated in the Control Room or that creates industrial safety hazards (e.g., electric shock) that precludes access necessary to operate or monitor safety equipment HA1.6 [1 2 3 4 5 DEF] Sea water bay water level > +18' 0" MSL (LI-3831A/B) OR Sea water bay water level < -16' 0" MSL (LI-3831A/B)	HU1.1 [1 2 3 4 5 DEF] Seismic event identified by any two of the following - "SEISMIC RECORDER OPERATING" (C903R-B1) alarm - Earthquake felt in plant - National Earthquake Information Center HU1.2 [1 2 3 4 5 DEF] Tornado striking within Protected Area boundary OR Sustained high winds > 105 mph HU1.3 [1 2 3 4 5 DEF] Turbine failure resulting in casing penetration or damage to turbine or generator seals HU1.4 [1 2 3 4 5 DEF] Flooding in any Table H-2 area that has the potential to affect safety-related equipment needed for the current operating mode HU1.5 [1 2 3 4 5 DEF] Sea water bay water level > +13' 6" MSL (LI-3831A/B) OR Sea water bay water level < -13' 9" MSL (LI-3831A/B)
2 Fire or Explosion	None	None	HA2.1 [1 2 3 4 5 DEF] Fire or explosion resulting in visible damage to any Table H-1 area containing safety systems or components or Control Room indication of degraded performance of safety systems	HU2.1 [1 2 3 4 5 DEF] Fire not extinguished within 15 min. of control room notification or verification of a control room fire alarm in any Table H-1 Area (Note 3) HU2.2 [1 2 3 4 5 DEF] Explosion within the Protected Area
3 Hazardous Gas	None	Note 8 If the equipment in the stated area was already inoperable, or out of service, before the event occurred, then this EAL should not be declared as it will have no adverse impact on the ability of the plant to safely operate or safely shutdown beyond that already allowed by Technical Specifications at the time of the event	HA3.1 [1 2 3 4 5 DEF] Access to any Table H-1 area is prohibited due to toxic, corrosive, asphyxiant or flammable gases which jeopardize operation of systems required to maintain safe operations or safely shut down the reactor (Note 8)	HU3.1 [1 2 3 4 5 DEF] Toxic, corrosive, asphyxiant or flammable gases in amounts that have or could adversely affect normal plant operations HU3.2 [1 2 3 4 5 DEF] Recommendation by local, county or state officials to evacuate or shelter site personnel based on offsite event
4 Security	HG4.1 [1 2 3 4 5 DEF] A hostile action has occurred such that plant personnel are unable to operate equipment required to maintain safety functions OR A hostile action has caused failure of Spent Fuel Cooling Systems and imminent fuel damage is likely for recently irradiated fuel (fuel has decayed < 24 hrs since reactor shutdown)	HS4.1 [1 2 3 4 5 DEF] A hostile action is occurring or has occurred within the Protected Area as reported by the Station Security Force	HA4.1 [1 2 3 4 5 DEF] A hostile action is occurring or has occurred within the Owner Controlled Area as reported by the Station Security Force OR A validated notification from NRC of an airliner attack threat within 30 min of the site	HU4.1 [1 2 3 4 5 DEF] A security condition that does not involve a hostile action as reported by the Station Security Force OR A credible site-specific security threat notification OR A validated notification from NRC providing information of an aircraft threat
5 Control Room Evacuation	None	HS5.1 [1 2 3 4 5 DEF] Control Room evacuation has been initiated AND Control of the plant cannot be established within 15 min	HA5.1 [1 2 3 4 5 DEF] PNPS 2.4.143 *"Shutdown from Outside Control Room"* requires Control Room evacuation	None
6 Judgment	HG6.1 [1 2 3 4 5 DEF] Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve EITHER 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 (1,000 mrem TEDE and 5,000 mrem thyroid CDE) beyond the site boundary	HS6.1 [1 2 3 4 5 DEF] Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve EITHER 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 (1,000 mrem TEDE and 5,000 mrem thyroid CDE) beyond the site boundary	HA6.1 [1 2 3 4 5 DEF] Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve EITHER 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 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 (1,000 mrem TEDE and 5,000 mrem thyroid CDE)	HU6.1 [1 2 3 4 5 DEF] Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which indicate EITHER A potential degradation of the level of safety of the plant OR A security threat to facility protection has been initiated No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs

Table H-2 Internal Flooding Areas

- Reactor Building
- Rx Closed Cooling Water System Auxiliary Bays
- Turbine Building
- Diesel Generator Rooms
- Salt Service Water Bays
- Radwaste Area

Table H-1 Safe Shutdown Areas

- Reactor Building
- Control Room
- Cable Spreading Room
- 4160 Switchgear Rooms
- Diesel Generator Rooms
- Salt Service Water Bays
- Rx Closed Cooling Water System Auxiliary Bays
- Standby Gas Treatment Area, 51' Level, Turbine Bldg
- Condensate Storage Tank

Modes: 1 Run | 2 Startup | 3 Hot Shutdown | 4 Cold Shutdown | 5 Refuel | DEF Defueled

Entergy — Pilgrim Nuclear Power Station Emergency Action Level Matrix

C — Cold SD/ Refuel System Malfunct.

Subcategory	General Emergency	Site Area Emergency	Alert	Unusual Event
1 Loss of AC Power	Note 3 The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition will likely exceed the applicable time.		CA1.1 [4 5 DEF] Loss of all offsite and all onsite AC power (Table C-4) to emergency Buses A5 and A6 for ≥ 15 min (Note 3)	CU1.1 [4 5] AC power capability to emergency Buses A5 and A6 reduced to a single power source (Table C-4) for ≥ 15 min such that any additional single failure would result in loss of all AC power to emergency buses (Note 3)
2 RPV Level	CG2.1 [4 5] RPV level < -125 in for ≥ 30 min (Note 3) AND Any Containment Challenge indication, Table C-5 CG2.2 [4 5] RPV level cannot be monitored for ≥ 30 min. (Note 3) with a loss of inventory as indicated by EITHER Unexplained RPV leakage indication, Table C-1 OR Erratic Source Range Monitor indication AND Any Containment Challenge indication, Table C-5	CS2.1 [4 5] With Containment Closure not established, RPV level < -60 in (Note 4) CS2.2 [4 5] With Containment Closure established, RPV level < -125 in (Note 4) CS2.3 [4 5] RPV level cannot be monitored for ≥ 30 min (Note 3) with a loss of inventory as indicated by EITHER Unexplained RPV leakage indication, Table C-1 OR Erratic Source Range Monitor indication	CA2.1 [4 5] RPV level < -45 in OR RPV level cannot be monitored for ≥ 15 min. with any unexplained RPV leakage indication, Table C-1 (Note 3) Note 4 Containment Closure is the action taken to secure primary or secondary containment and its associated structures, systems, and components as a functional barrier to fission product release under existing plant conditions. Containment Closure is established when Primary or Secondary Containment Integrity is established per Section 3.7 of Technical Specifications.	CU2.1 [4] RPV level cannot be restored and maintained > +12 in. for ≥ 15 min. (Note 3) CU2.2 [5] Unplanned RPV level drop for ≥ 15 min (Note 3) below EITHER RPV flange (+182 in.) OR RPV level band when the RPV level band is established below the RPV flange CU2.3 [5] RPV level cannot be monitored with any unexplained RPV leakage indication, Table C-1
3 RCS Temp.	None	Note 6 ILRT, CRD scram time testing and hydrostatic testing in which RCS temperature is intentionally raised above 212°F per Technical Specification LCO 3.14 are not applicable to these EALs	CA3.1 [4 5] Any unplanned event results in RCS temperature > 212°F for > Table C-3 duration (Note 5) OR RPV pressure increase > 15 psig due to loss of RCS cooling	CU3.1 [4 5] Any unplanned event results in RCS temperature > 212°F due to loss of decay heat removal capability (Note 5) CU3.2 [4 5] Loss of all RCS temperature and RPV level indication for ≥ 15 min (Note 3)
4 Comm.	None	None	None	CU4.1 [4 5 DEF] Loss of all Table C-2 onsite (internal) communication methods affecting the ability to perform routine operations OR Loss of all Table C-2 offsite (external) communication methods affecting the ability to perform offsite notifications
5 Inadvertent Criticality	None	None	None	CU5.1 [4 5] Unplanned sustained positive period observed on nuclear instrumentation
6 Loss of DC Power	None	None	None	CU6.1 [4 5] < 105 VDC bus voltage indications on all Technical Specification required 125 VDC buses for ≥ 15 min. (Note 3)

Table C-1 RPV Leakage Indications

- Drywell equipment drain sump level rise
- Drywell floor drain sump level rise
- Reactor Building equipment drain sump level rise
- Reactor Building floor drain sump level rise
- Torus level rise
- RPV make-up rate rise
- Observation of unisolable RCS leakage

Table C-3 RCS Reheat Duration Thresholds

1. RCS intact (Containment Closure N/A)	60 min.*
2. Containment Closure established AND RCS not intact	20 min.*
3. Containment Closure not established AND RCS not intact	0 min.

* If an RCS heat removal system is in operation within this time frame and RCS temperature is being reduced, the EAL is not applicable

Table C-2 Communications Systems

System	Onsite (internal)	Offsite (external)
Plant Telephone System (CENTREX)	X	X
Wireless Telephone System	X	X
Pilgrim Station Radio System	X	
Plant Gaitronics System	X	
Alternate Shutdown Communication	X	
NRC-ENS Telephone, Direct Line		X
Satellite phones		X

Table C-4 AC Power Sources

Offsite
- Startup Transformer (X4)
- Shutdown Transformer
- UAT
- Backscuttle via Main Transformer (only if already established)

Onsite
- EDG A
- EDG B
- SBO DG

Table C-5 Containment Challenge Indications

- Containment Closure not established (Note 4)
- Deflagration concentrations exist inside PC
- Unplanned rise in PC pressure
- Secondary Containment area radiation > any Maximum Safe Operating Value (EOP-4, Table L)

Note 1 The Emergency Director should not wait until the applicable time frame has elapsed, but should declare the even as soon as it is determined that the condition will most likely exceed the applicable time. If dose assement results are available declaration should be based on dose assessment instead of radiation monitor values (See EAL AS1.2/AG1.2). Do not delay declaration awaiting dose assessment results.

Note 2 The Emergency Director should not wait until the applicable time frame has elapsed but should declare the event as soon as it is determined that the release duration has exceeded or will likely exceed the applicable time. In the absense of data to the contrary assume tha the release duration has exceeded the applicable time if an ongoing release is detected and the release start time is unknown.

Note 3 The Emergency Director should not wait until the applicable time has elapsed , but should declare the event as soon as it has been determined that the condition will likely exceed the applicable time limit.

Note 4 Containment Closure is the action taken to secure primary or secondary containment and its associated structures, systems and components as a functional barrier to fission product release under existing plant conditions. Containment Closure is established when the Primary or Secondary Containment Integrity is established per section 3.7 of Technical Specifications.

Note 5 ILRT, CRD scram time testing and hydrostatic testing in which the RCS temperature is intentionally raised above 212 F per Technical Specfication LCO 3.14 are not applicable to these EALs

Note 6 Manual scram actions taken at the reactor control consoles are the following
- Reactor Scram push buttons
- Reactor Mode Switch in SHUTDOWN
- ATWS-ARI push buttons

Note 7 See Table F-1 Fission Product Barrier Matrix for possible escalation above the Unusual Event due to RCS Leakage

Note 8 If the equipment in the stated area was already inoperable or out of service before the event occured then this EAL should not be declared as it will have no adverse impact on the ability o fthe plant to safely operate or safely shutdown beyond the already allowed by Technical Specifications at the time of the event.

EAL Identifier

XXX.X

- Category (A, H, S, F, C)
- Emergency classification (G, S, A, U)
- Subcategory number (1 if no subcategory)
- Sequential number within subcategory/classification

COLD CONDITIONS

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 dedicated phone and facsimile equipment, 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 dedicated phone and facsimile equipment, 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 Chiltonville Staging Area 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 voice 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".

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.

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 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 citizen 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.

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 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.

Section F: Emergency Communications

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

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

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

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

   PNPS 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 Interactive Voice Response (telephone) 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 Voice Activation, if available, or initiating individual telephone call-outs of emergency response personnel.

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 and 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 Assessment Team (NIAT) Radio: This repeater 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.
- Fixed Cellular Telephone: This system is provided in the Shift Manager's office in the Control Room, the TSC, the OSC, CAS and SAS as a backup to the local commercial telephone system.

c. Special Communication Links: Separate communications methods exist among the various emergency response facilities in order to insure reliable and timely exchange of information. These methods consist of the following:

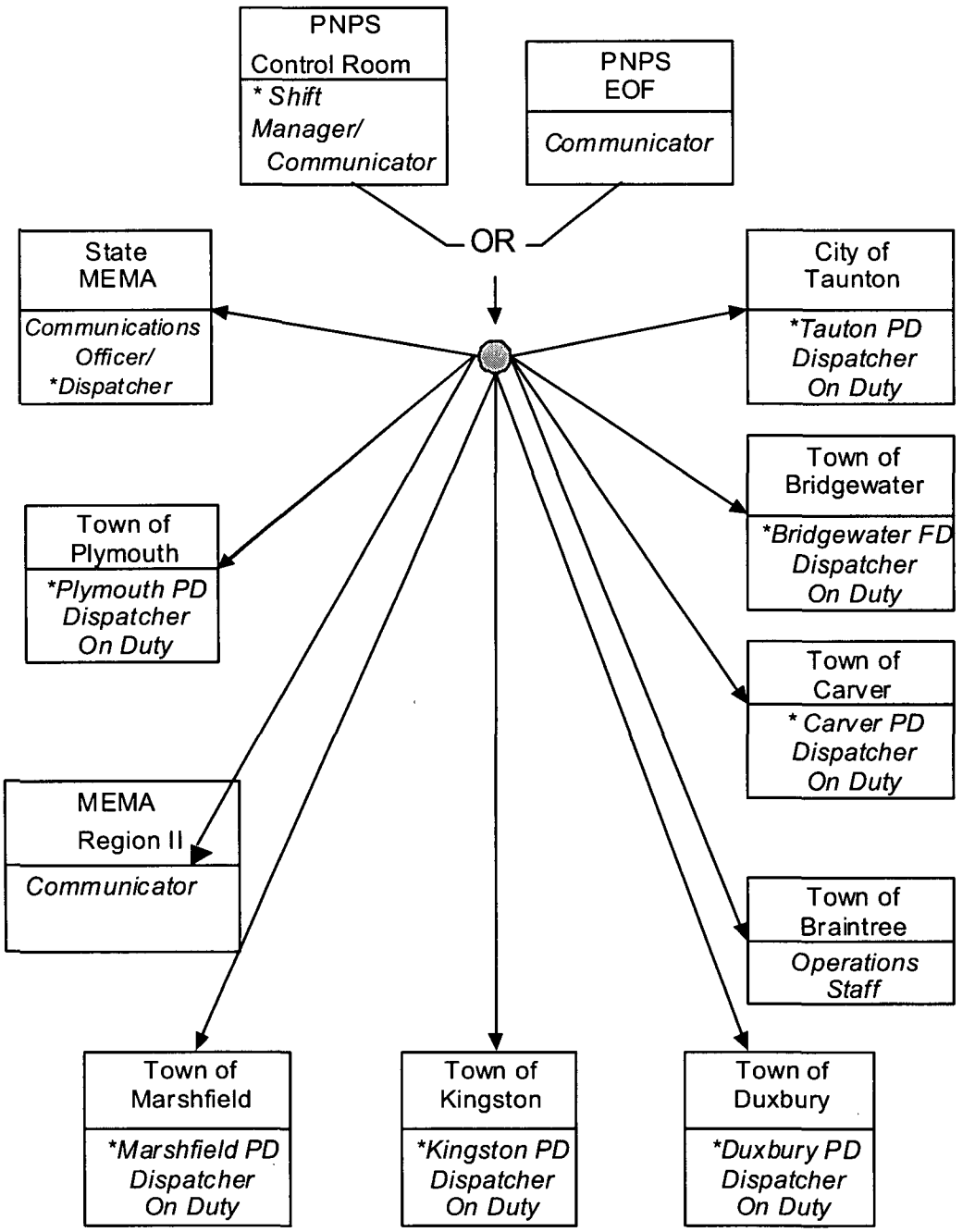
- Dedicated Notification Network (DNN): The DNN is a dedicated voice notification and facsimile network that provides a notification link from PNPS (Control Room and EOF) to each offsite agency. The DNN is the primary notification method from PNPS to offsite authorities. Figure F-4 depicts the initial notification scheme. BECONS is 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.
- Plant Data Phone (PDP): An administratively dedicated telephone that provides conferencing capability among the Control Room, TSC, EOF and the Alternate EOF. The PDP is used to transmit Station data for status boards located in each of the emergency facilities.
- Emergency Conference Line (ECL): An administratively dedicated telephone that provides conferencing capability among the Control Room, TSC, EOF, AEOF, and the primary conference room at PNPS for use by management personnel located in each of the facilities.
- EverBridge: The primary PNPS ERO notification system utilizing various modalities including telephone, pager, email, SMS text messaging as well as an alternate voice activated system 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.
- Facsimile Equipment: Facsimile equipment located in each of the onsite and offsite Station and governmental emergency response facilities for the transmission and receipt via wire line of information, texts, pictures or diagrams in hard copy form. This equipment is in addition to the facsimile equipment associated with the DNN.
- PNPS Mitigation Line: An administratively dedicated telephone that provides conferencing capability among the Control Room, TSC, EOF and alternate EOF.

- Onsite Gaitronics Page System: A public address system, separate from any telephone system, which consists of handset stations, loud speakers, and desk set units. The Gaitronics Page System provides five Station channels, one of which is dedicated to operations/emergency use only.

2. Medical Communications: PNPS establishes communications with the primary medical hospital, Jordan Hospital, and the backup hospital via commercial telephone which is accessed by Station personnel either via commercial onsite telephone or by a PNPS telephone. A direct, dedicated ring-down telephone into the Plymouth Fire Department (the ambulance Dispatcher) provides for a coordinated communications link to the ambulances responding to PNPS or transporting personnel from the Station. Figure F-3 depicts this coordinated communications link.

3. Communications Drills: Communications drills between PNPS and state and local governments are conducted in accordance with criteria contained in Section N.2. Also, at least monthly, PNPS personnel conduct a surveillance to determine the working condition and availability of each piece of communications equipment. This surveillance includes a check of the units' operability and general condition. Deficiencies are identified and corrected. The PNPS Electronics Laboratory maintains a large number of spare units to rapidly replace non-operational equipment.

Figure F-1: Initial Notification



* Indicates 24-hour operation

PNPS To Each Offsite Agency

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

Table F-1: Communications Matrix

	Control Room	TSC	OSC	EOF	AEOF	JIC	Corporate	Primary Gate
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	1,5,7,10,15,16,19,24,27	2,4,7,10,15,16,24	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 Gate	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	5,10,19,20,22,27	5,10,19	10,19	10	10,12,13
Reception Center Towns	5,10,19,27,	5,10	10	5,10,19,20,22,27	5,10,19	10,19	10	10
MEMA	5,10,19,27	5,10	10	5,10,19,20,22,26,27	5,10,19	10,19	10	10
Rhode Island	10	10	10	10,19	10,19	10,19	10	10
NRC	9,10,17,18,19,23	9,10,17,18,23	10,23	10,17,18,19,23	10,19	10,19	10	10
Jordan hospital	10	10	10	10	10	10	10	10
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 Ctr Towns	MEMA	Rhode Island	NRC	Jordan Hospital	OMT
Control Room							
TSC							
OSC							
EOF							
AEOF							
JIC							
Corporate							
Primary Gate							
EPZ Towns	5,10,20,22						
Reception Center Towns	5,10,20,22	5,10,20,22					
MEMA	5,10,19,20,22	5,10,19,20,22					
Rhode Island	10	10	10				
NRC	10	10	10	10			
Jordan hospital	10,21	10,21	10,21	10	10		
OMT						28	4,28
1. Pilgrim Alert Radio	7. Rad Data Phone	13. Ringdown-Plymouth Fire		19. Facsimile Equipment		25. Operator Walk down Radio	
2. Security Radio	8. Reserved	14. EOF-Media Center		20. Amateur Radio (2 Meter)		26. NIAT Radio	
3. Reserved	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. Amateur Radio (440 MHz)		28. Cellular Telephone	
5. BECONS	11. Ringdown-State Police	17. Health Physics Network		23. Fed Telecommun.Sys (FTS)			
6. Fire Brigade Phone	12. Ringdown-Plymouth Police	18. Emergency Notification Network		24. PNPS Mitigation Line			

Table F-2: Communications Equipment

		CONTROL RM	TSC/OSC	EOF	AEOF	PRIMARY GATE	JOINT INFORMATION CTR	CAS	SAS
RADIOS	Pilgrim Alert Radio	☒	☒	☒	☒	☒		☒	☒
	Security Radio	☒	☒	☒		☒		☒	☒
	NIAT Radio			☒					
	PNPS Rad. Monitoring Team Radio	☒	☒	☒	☒				
	BECONS	☒	☒	☒	☒				
	Races Radio 2 Meter			☒					
	Races Radio 440			☒					
TELEPHONES	Dedicated Notification Network (DNN)	☒		☒					
	PNPS System	☒	☒	☒		☒	☒	☒	☒
	Cellular Telephone System	☒	☒			☒		☒	☒
	Local Commercial Bell System	☒	☒	☒	☒	☒	☒		
	Auto Ringdown Plymouth PD	☒		☒		☒		☒	☒
	Auto Ringdown Plymouth Fire Department	☒						☒	☒
	Auto Ringdown State Police	☒		☒		☒		☒	☒
	Satellite Telephone	☒		☒					
	Plymouth Fire Radio							☒	☒
	Plymouth Police Radio							☒	☒
	Plant Data Phone (PDP)	☒	☒	☒	☒				
	Emergency Conference Line (ECL)	☒	☒	☒	☒				
	ENS	☒	☒	☒					
	HPN		☒	☒					
OTHER	Plant Page System	☒	☒			☒			
	Facsimile Equipment	☒	☒	☒	☒	☒	☒		
	Mitigation Line	☒	☒	☒	☒				
	Rad Data Line	☒	☒	☒	☒				

FIGURE F-2: DELETED

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

Figure F-3: PNPS - Medical Communications

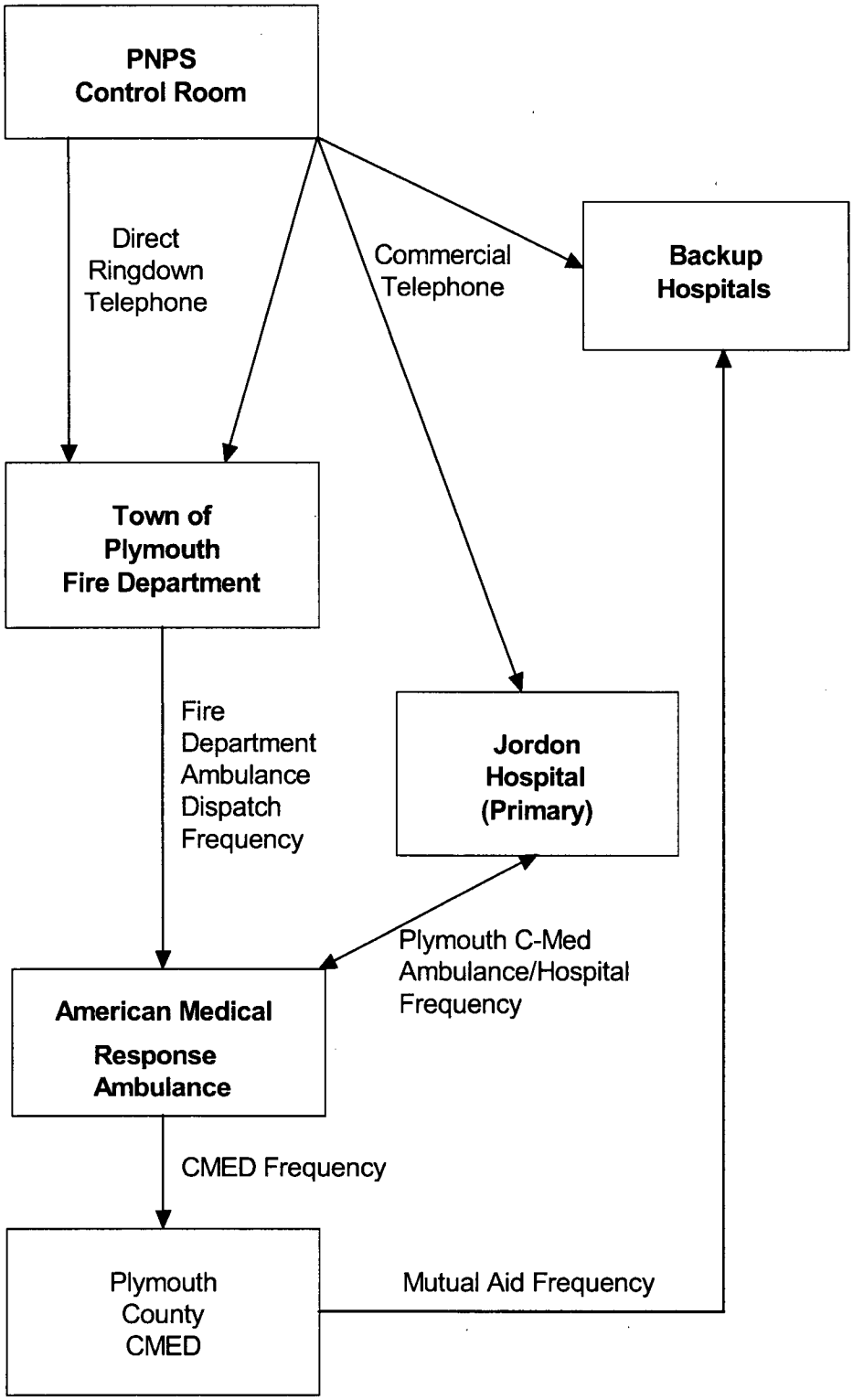
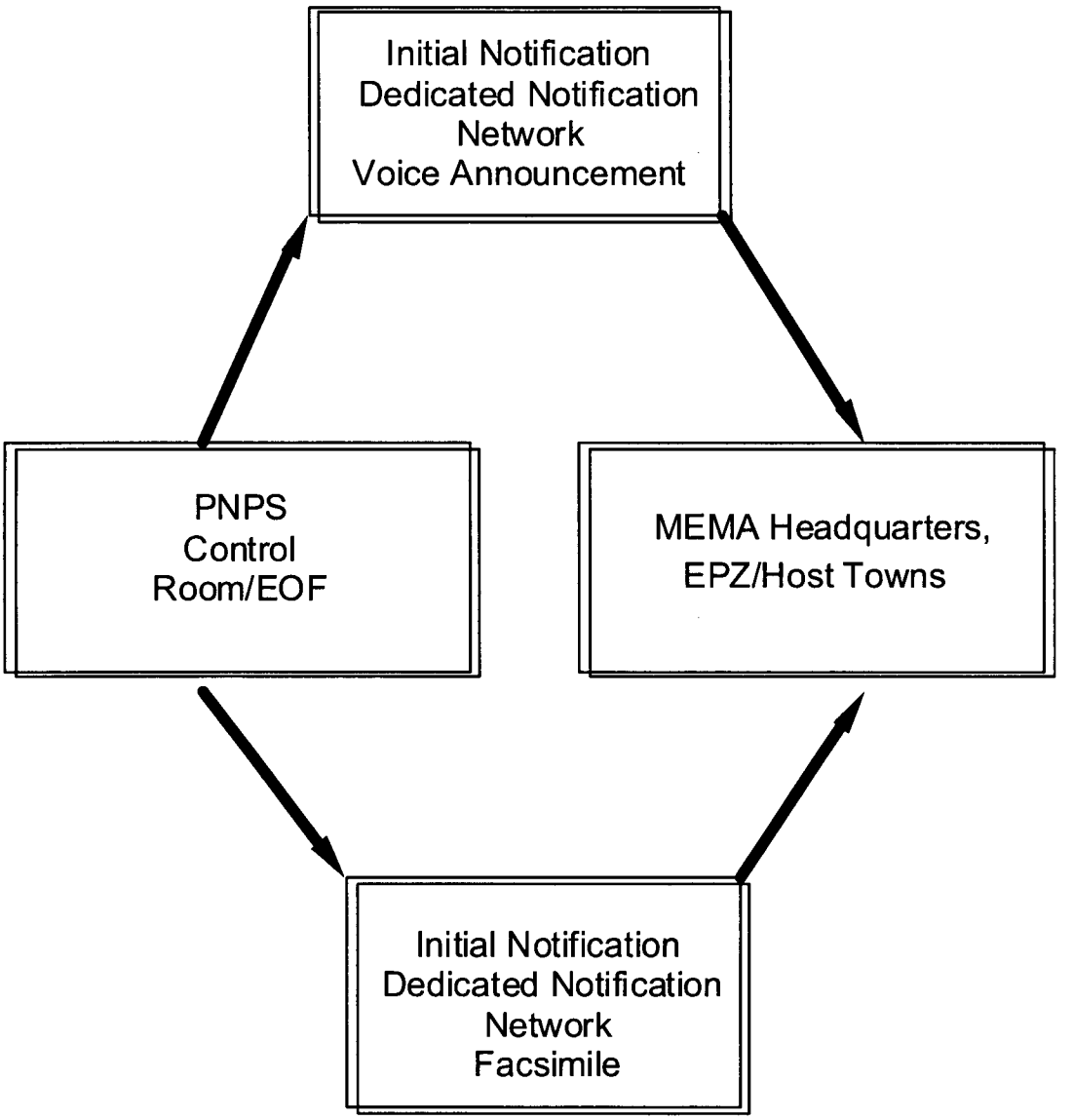


Figure F-4: Initial Notification Scheme



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 installed 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 College in Bridgewater. Comparable facilities both for 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 to 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).

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 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.

Section H: Emergency Facilities and Equipment

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

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

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

   The Control Room is staffed by Licensed Nuclear Plant Operators and Senior Licensed Nuclear Plant Operators. All plant-related operations are directed from the Control Room and supervised by the Shift Manager. 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 Manager and the Operations Coordinator based on the type of incident occurring at the Station.

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; and coordination of emergency response activities with Federal, Commonwealth and local agencies.

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

   In the event an EOF evacuation becomes necessary, operations can be transferred to the Alternate Emergency Operations Facility (AEOF). The AEOF is located 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. Emergency Operations Centers (EOC) 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 teletype) 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 activated upon declaration of an Alert. 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 College 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 MEMA/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.

4. Activation: PNPS has put into place plans and procedures to insure the timely activation of its emergency response facilities. Although the response time will vary due to factors such as weather and traffic conditions, a goal of thirty (30) minutes for some minimum staffing and one (1) hour for full manning has been established for onsite emergency facilities including the EOF. Plans have been developed to insure timely functional activation and staffing of the Joint Information Center.

5. Monitoring Equipment for Classification: PNPS has identified and installed onsite monitoring systems that are utilized to assess the incident and make determinations on the proper emergency measures to be implemented. This equipment includes but is not limited to the following:

   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.

6. Offsite Monitoring Equipment: PNPS has made provisions to perform offsite monitoring during emergency situations.

   a. Offsite sources of information pertaining to geophysical phenomena include the National Weather Service located at 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 dosimeters of legal reward (DLRs), 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:

   Entergy Nuclear Northeast maintains an environmental laboratory at the James A. Fitzpatrick plant located in Oswego, New York. Environmental sample preparation and counting is available at this laboratory.

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

   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.

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

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

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

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

9. 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 1.0E-07 μCi/cc.

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

   The Medical Building, located near the main parking lot, is supplied with an assortment of first aid and medical treatment equipment and supplies that are used on a daily basis. Emergency medical treatment equipment and supplies are also stored in the Engineering Support Building and OSC Medical Locker. 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.

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

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

    The Emergency Preparedness 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 Preparedness Manager will inform the Nuclear Safety Assurance Director within one business day of the inoperable condition, as well as of compensatory measures taken, if any.

11. General Use Emergency Equipment: Tables H.1, H.2, H.3, and H.4 identify by general category the equipment that typically make up emergency kits used in an emergency situation. Table F.1 shows available communications equipment. PNPS cooperates with local and Commonwealth officials to insure that sufficient and appropriate emergency kits are made available.

12. Collection Point for Field Samples: The EOF has been designated as the central point for the receipt and analysis of radiological field monitoring samples. Sampling and analysis equipment is available for activity determination of these samples. Sufficient field monitoring equipment is maintained at the EOF for initial sampling. Monthly surveillance and maintenance is performed to insure the readiness of field monitoring equipment. Instrumentation and equipment utilized for activity determination are routinely calibrated to insure timely availability.

Table H-1: Typical Offsite Monitoring Equipment

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

Table H-2: Typical Radiation Protection Equipment

RO2A or Equivalent	Coveralls
120 V Air Sampler	Hoods
RAS Air Sampler	Rubber Boots
E-520 or Equivalent	Rubber Gloves
TLRs	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

Table H-3: Typical Medical Equipment

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

Table H-4: Typical Decontamination Equipment

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

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 process computer (EPIC/SPDS)

Technical Support Center Electrical System (including UPS)

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 Dose Assessment and Protective Action Recommendation (DAPAR) computer code which displays the projected whole body and thyroid exposures to the populace in the plume exposure pathway.
- 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

   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 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.

   b. If a liquid or gaseous release occurs, the routine or high range process monitors will indicate the release rate in counts per second or Roentgens per hour. If the release is from an unmonitored point, technicians will take grab samples to be analyzed.

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

4. Effluent Monitor Data and DAPAR: The correlation between effluent monitor data and onsite and offsite exposure rates is accomplished through use of the Dose Assessment and Protective Action Recommendation (DAPAR) computer code. DAPAR is a computer code which allows for the direct input of effluent monitor and meteorological data. The computer will generate release rates, projected dose rates and doses to the whole body and thyroid as well as downwind halogen and particulate concentrations via the plume exposure pathway. Dose projections may also be performed without the use of a computer through a series of hand calculations.

5. Meteorological Information: Meteorological data are available from two meteorological towers, a 220 foot primary and a 160 foot back-up. The data available includes wind speed, wind direction, temperature, and delta temperature. These data are utilized by the utility, Commonwealth and NRC to provide near real-time predictions of the atmospheric effluent transport and diffusion.

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

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

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 1.0E-7 μcuries per cubic centimeter in the presence of noble gases.

10. Dose Estimates: Specific procedures exist for the correlation of air activity levels to dose rate for key isotopes. Provisions have been established for estimating integrated dose from the projected and actual dose rates and for the comparison of these estimates with the protective action guides.

11. Commonwealth Monitoring Capabilities: The Commonwealth of Massachusetts has the ability to dispatch its own field monitoring teams to track the airborne radioactive plume. The Commonwealth also has the ability and resources to interpret radiological data as well as coordinating with federal and utility monitoring teams to compare sample results.

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 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 (Gai-tronics). 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 Support Building cafeteria is designated as the primary assembly area. Should conditions warrant, personnel may be directed to evacuate via personal automobiles to the alternate assembly area, the Chiltonville Training Center. The assembly area is chosen on the basis of wind direction. Visitors to the station assemble with their escorts.

3. Radiological Monitoring: In the event of Protected Area evacuation, radiation protection personnel are dispatched to the designated assembly area, to provide radiological monitoring and, if necessary, decontamination of evacuees.

4. Evacuation: Evacuation is the primary protective action anticipated for onsite personnel not having emergency response assignments. Contractors who do not have emergency responsibilities, visitors, and handicapped personnel are evacuated immediately at the Alert or higher classification.

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

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

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.

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 Protective Action Recommendations for Severe Accidents."

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

   The possible Protective Action Recommendations (PARs) issued by PNPS 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

   - If plant conditions indicate that substantial core damage is imminent or has occurred **and** a significant emergency release of reactor coolant into the containment is imminent or has occurred **and** containment failure is imminent or has occurred, then evacuation of the five (5) mile ring and ten (10) 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), 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 state 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 to determine an exposure period for the calculation of dose projections.

9. Protective Measure Implementation: The responsibility for implementing protective measures based on protective action guides rests with Commonwealth and local agencies.

10. Factors Affecting Protective Measure Implementation: The PNPS, Commonwealth, and local emergency plans used to implement the protective measures for the plume exposure pathway take numerous factors into consideration. Among these considerations are:

    a. Most of the evacuating population will travel in their own vehicles, leaving the EPZ via designated evacuation routes. Figures J-1 through J-5 are maps showing the evacuation routes, evacuation subareas, reception centers in host areas, and mass care shelters. Pre-selected sampling and monitoring points are presented in Table J-2.

    b. The population distribution around Pilgrim Nuclear Power Station is presented in the Evacuation Time Estimate, Appendix 5.

    c. As indicated in Section 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. Means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement are described in Commonwealth and local plans and procedures.

    e. Provisions for the use of 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, the Evacuation Time Estimate.

j. Control of access to evacuated areas and organization responsibilities for such control are described in Commonwealth and local plans and procedures and in Appendix 5, the evacuation time estimate.

k. Identification of and means for dealing with potential impediments to use of evacuation routes, (e.g., seasonal impassability of roads) and contingency measures are described in Commonwealth and local plans and procedures

l. Time estimates for evacuation of various sectors and distances based on a dynamic analysis (time-motion study under various conditions) for the plume exposure pathway emergency planning zone have been performed and are contained in Appendix 5, the Evacuation Time Estimate.

m. The 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 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.

Table J-1: Protective Action Recommendation Decision Chart

IF:	THEN:
1. Projected dose is: < 1 Rem Whole Body (EPA TEDE) and < 5 Rem Thyroid (EPA CDE)	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 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 or offsite emergency response capabilities) is usually performed by the Commonwealth.

† Consideration of administering KI to the general public would be recommended by PNPS at the General Emergency classification as a minimum based on plant conditions.

Figure J-1: Evacuation Routes

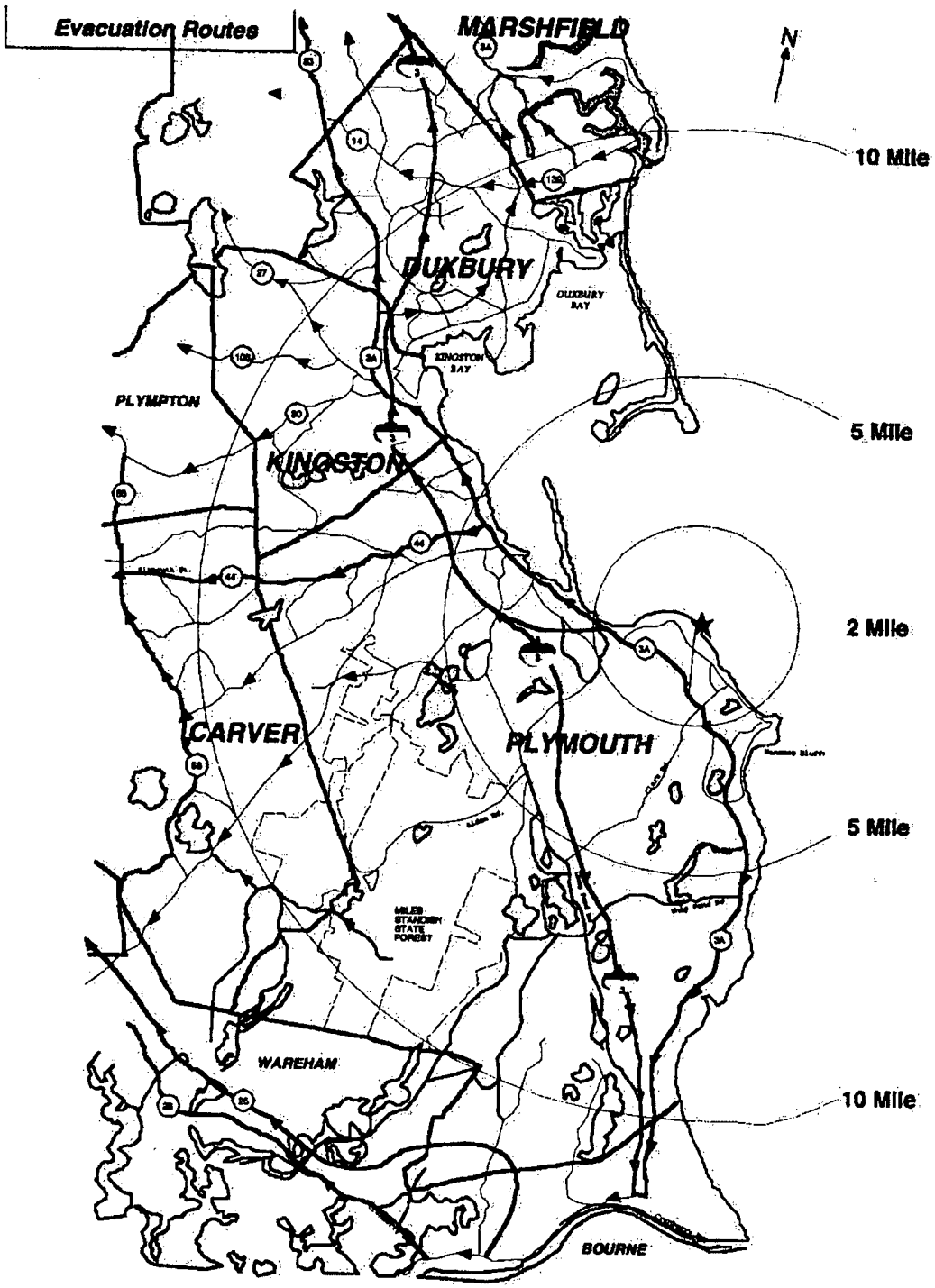


Figure J-2: 10-Mile EPZ With Subareas

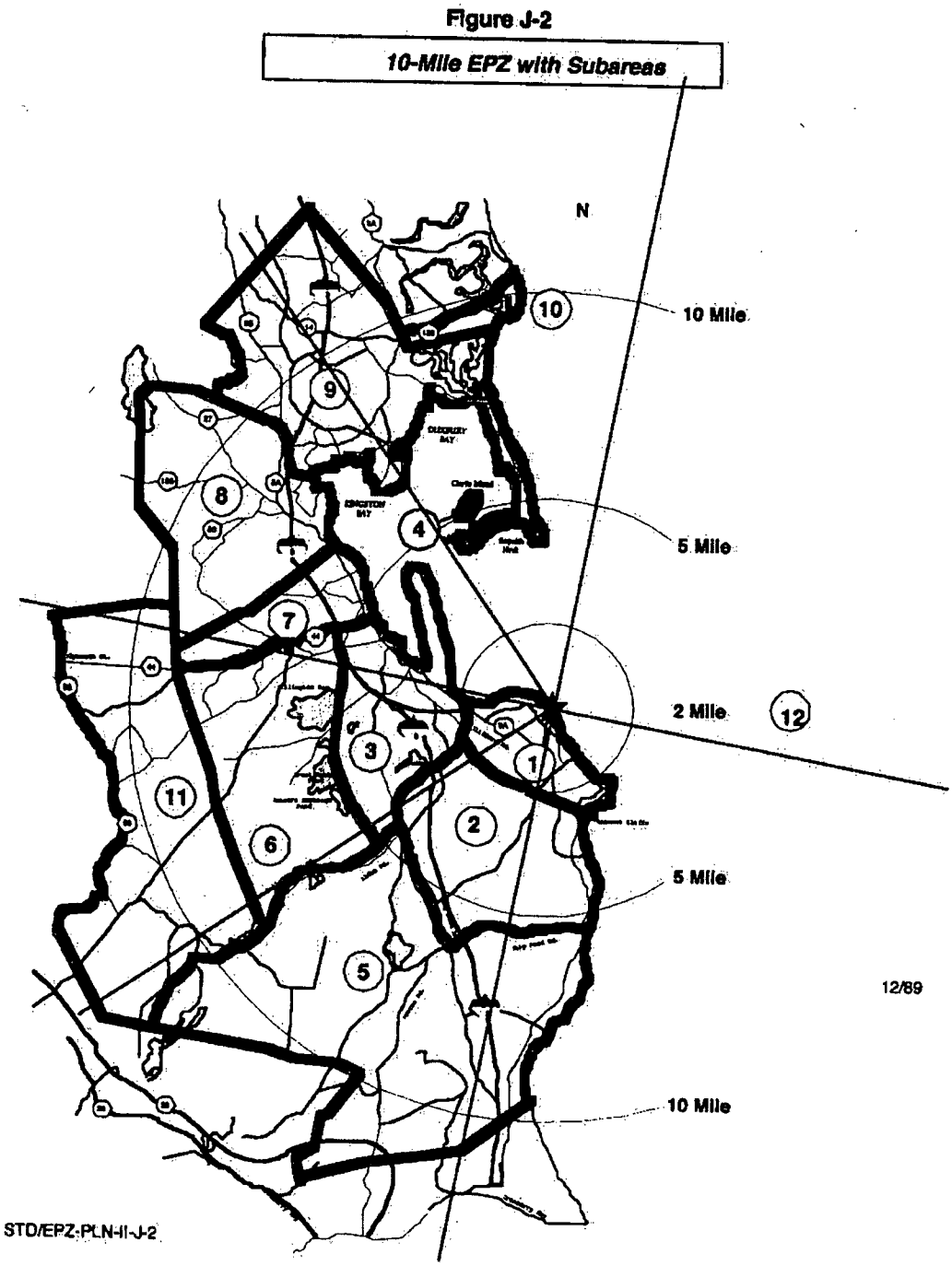
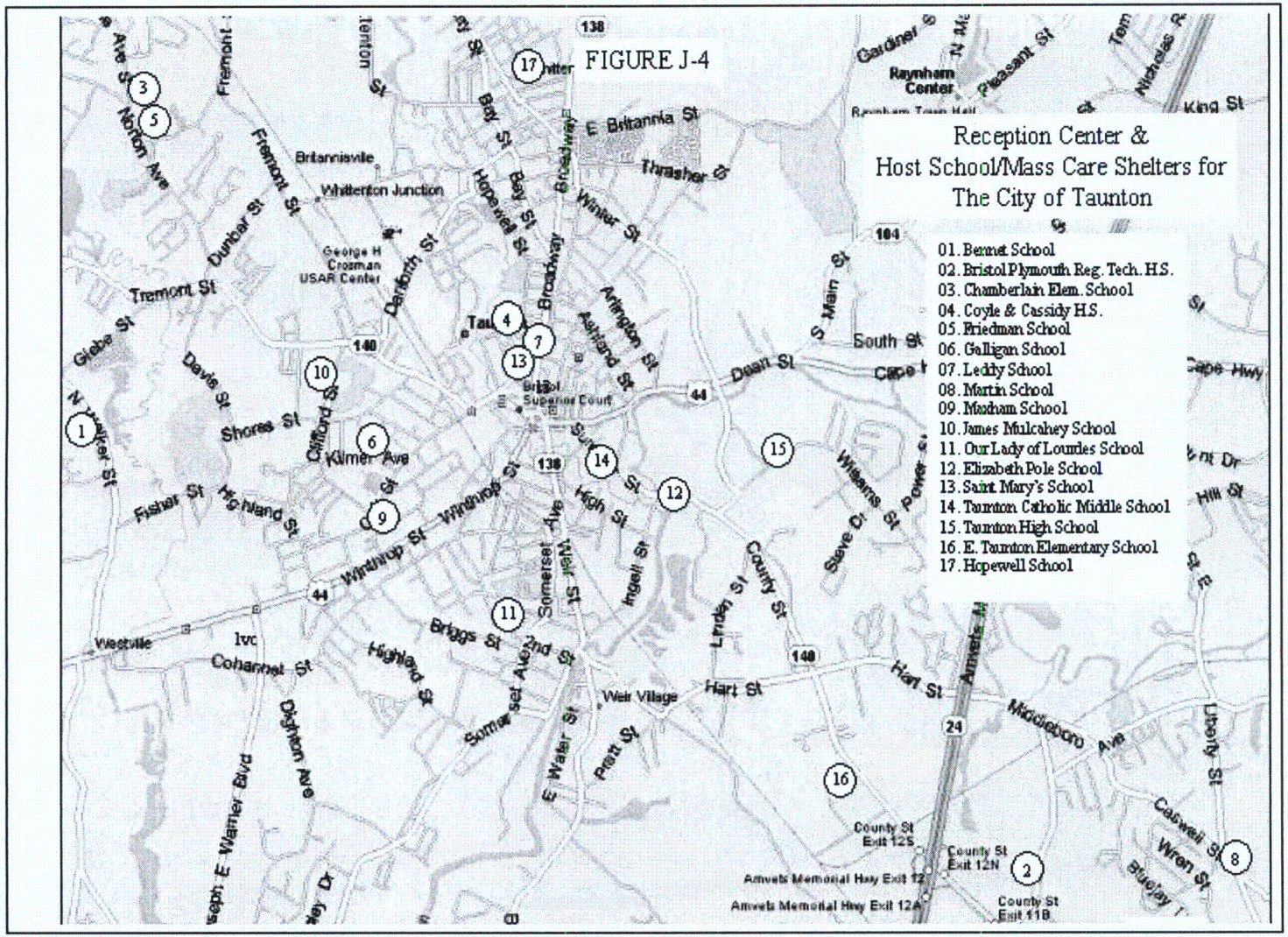
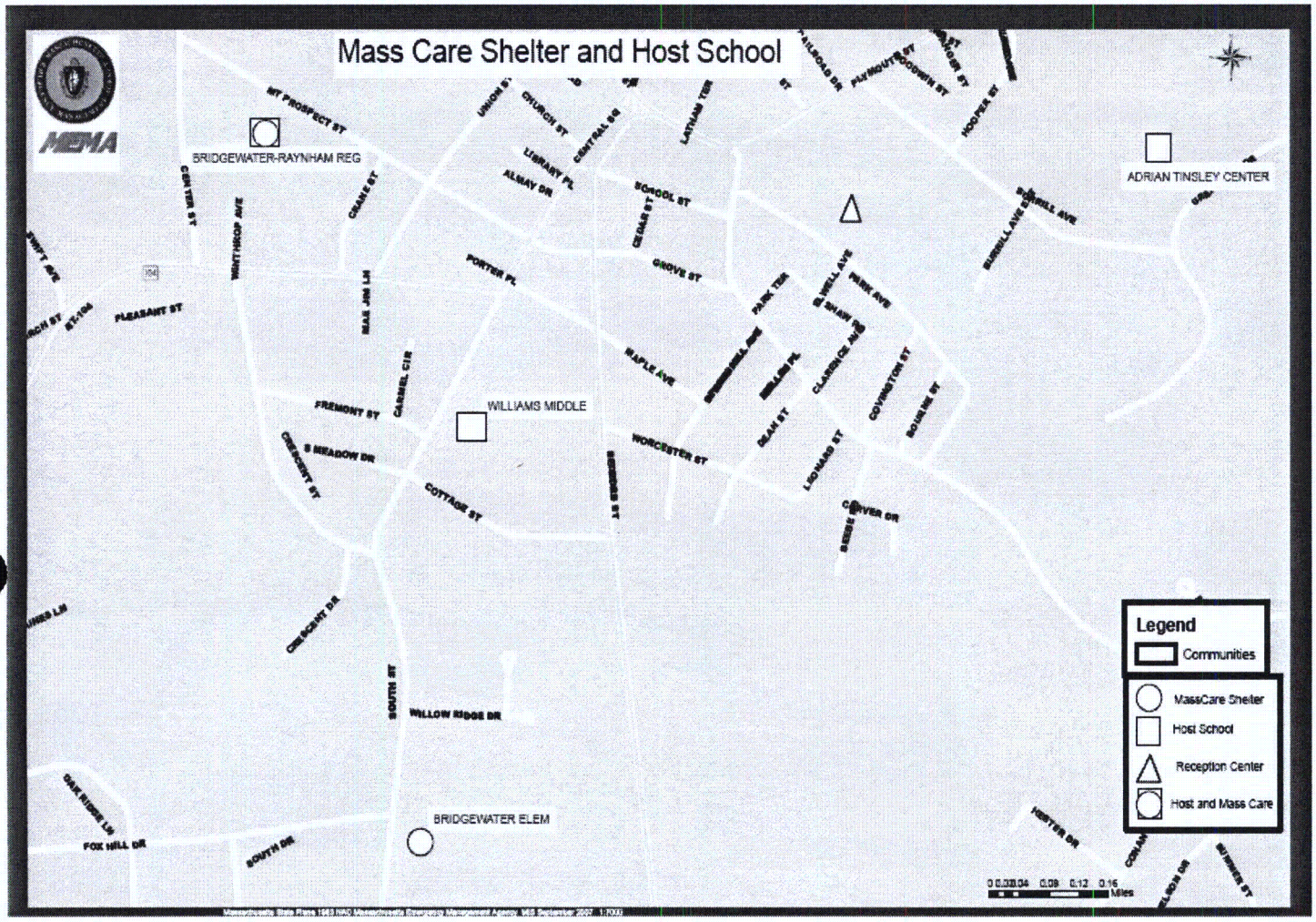


Figure J-3: Mass Care Shelter and Reception Center Locations, City of Taunton*



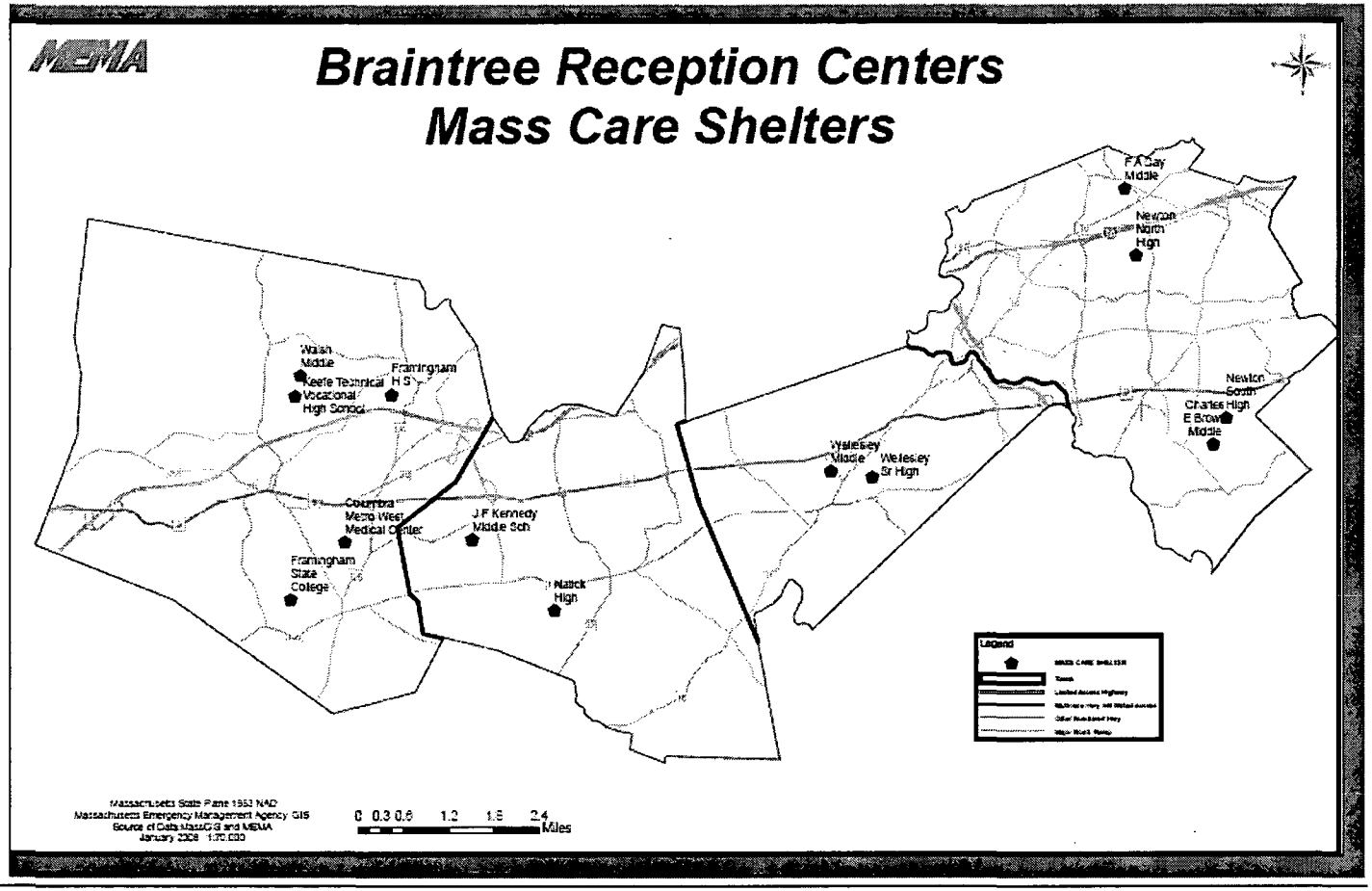
*Information provided by MEMA, Region II, 8/2011

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



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

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



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

Section K: Radiological Exposure Control

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

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

Dose Limit*	Activity	Conditions
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.

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 DLR badge is issued to all emergency response personnel in the protected area. All Level II GET responders are badged every work day; Level I GET responders are badged at their onsite emergency facilities upon activation. This, in addition to both low and high range self-indicating dosimetry, is used to monitor emergency workers exposure during an accident. The capability exists for the emergency processing of 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 Medical Building Portable first-aid kits, arevavailable in the Engineering and Support Building and Medical Building, are available. A personnel injury onsite involving possible radioactive contamination is initially treated by an on-shift EMT. Prompt attention is given to life endangering injuries such as extensive burns, serious wounds or fractures, in preference to decontamination. If the injury permits, all reasonable effort is made to decontaminate the individual prior to movement. If decontamination is impractical, the patient is covered in such a manner as to minimize the spread of contamination until medical aid can be obtained or the patient can be hospitalized.

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

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

6. Contamination Control

   a. Areas in the plant found to be contaminated are isolated as restricted areas with appropriate radiological protection and access control as directed by the 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, drinking and smoking are prohibited in all Emergency Response facilities until such time as habitability surveys indicate that such activities are permissible.

   c. Restricted areas will be returned to normal use when contamination levels have been returned to acceptable levels.

7. Decontamination of Relocated Personnel: Non-essential onsite personnel 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.

Section L: Medical and Public Health Support

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

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

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

2. Onsite First Aid Capability: Personnel injuries involving possible radioactive contamination are initially treated by an on-shift EMP. Prompt attention is given to life endangering injuries in preference to decontamination. (See Section O for training requirements).

3. Medical Service Facilities: The Commonwealth of Massachusetts maintains a list of public, private and military hospitals and other emergency medical facilities considered capable of providing medical support for any contaminated injured individuals.

4. Medical Transportation: PNPS has arranged with a local ambulance service for transporting victims of radiological accidents to medical support facilities. This service is contracted through the Plymouth Fire Department and is continuously available. (See Appendix 3 for Sample Letters of Agreement).

Section M: Reentry and Recovery Planning

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

1. Reentry: During an emergency, immediate actions are directed toward limiting the consequences of the accident, so as to afford maximum protection to Station personnel and the general public. Once corrective measures have been taken and effective control of the plant has been re-established, a more methodical approach to reentry is taken. This Emergency Plan therefore divides reentry into two separate categories:

   a. Plant damage control, mitigation, repair and rescue activities are conducted during the emergency phase of accident. This category of reentry is performed using emergency exposure controls and limits. Briefings for task activities and radiological controls may be provided verbally to dispatched personnel and documented afterwards. Procedures provided to dispatched personnel for emergency activities can be taken from existing plant documents or developed on a case basis for the task.

      All personnel dispatched from the onsite emergency facilities are authorized by the Emergency Plant Manager and coordinated through the Operations Support Center 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.

- 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.

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.

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 Operations and Plant Manager or a designated alternate will become the Recovery Plant Manager.

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

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

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

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

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

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

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

- Training
- Radiation Protection
- Chemistry
- Technical Support
- Engineering Support
- Quality Assurance
- Operations
- Security
- Maintenance
- Special Offsite Areas (Community Representatives, Environmental Samples, Investigations, etc.)

3. Recovery Phase Notifications: When the decision is made to enter the recovery phase, all members of the PNPS Emergency Response Organization are informed of the change. All personnel in the PNPS Nuclear Organization are instructed of the PNPS Recovery Organization and their responsibilities to the recovery effort.

4. Total Population Exposure: A method has been developed for estimating the total population exposure resulting from the accident. Total population exposure calculations are performed during the recovery phase of an accident. Cumulative data are collected from PNPS Emergency Response Organization records and release pathway filter analyses to estimate the source term. Data are obtained from offsite agencies to estimate the total exposed population. Environmental TLDs will be analyzed to provide additional data.

PNPS EMERGENCY PLAN

Section N: Drill and Exercise Program

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

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

1. Exercises/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 simulates an emergency that results in the release of radioactivity to the offsite environs, sufficient in magnitude to warrant a response by offsite authorities. For exercises involving only partial participation by these agencies, emphasis is placed on development and conduct of an exercise that is more mechanistically and operationally realistic. Players will be able, by implementing appropriate procedures and corrective actions, to determine the outcome of the scenario to a greater extent than when core damage and the release of radioactivity are prerequisites for demonstration of all objectives.

   b. Exercises/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 Six-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 six-year period. At least one drill/exercise every six years is started off-hours. Drills/Exercises are scheduled to be conducted at different times of the year. An unannounced drill/exercise is included in the Six-Year 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 are tested quarterly.

      Communications between PNPS and the PNPS Radiological 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.

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, and Entergy Nuclear Northeast.

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 Nuclear Safety Assurance 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.

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 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
      - American Medical Response Ambulance Service

      Training consists of the following:

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

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

   b. PNPS offers training support, as requested, for Commonwealth and local agencies whose function is to provide assistance during an emergency at PNPS. Training is offered on an annual basis, or as needed.

2. Classroom and Hands-On Training: Members of the PNPS Emergency Response Organization receive general and specialized classroom and hands-on emergency response training. Hands-on training is provided using one or more of the following methods:

   - Familiarization Sessions: A familiarization session is an informal, organized tabletop discussion of predetermined objectives.
   - 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.

- 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.

4. PNPS Emergency Response Organization Training Program: PNPS Emergency Response Organization personnel who are responsible for implementing this Plan receive initial, specialized and annual requalification training. Table O-1 is a sample training matrix. The detailed training matrix is maintained in the PNPS Nuclear Training Manual or EN-TQ-110, "Emergency Response Organization Training".

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

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

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

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

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

   a. Personnel Responsible for Management of an Emergency

      Emergency Director, Emergency 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 receive routine classroom and simulator training to ensure proficiency in this area.

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

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

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

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

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

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

- Computerized and Manual Dose Assessment
- Protective Action Recommendations
- 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 outline in Parts 1.a and 1.b of this section.

h. Medical Support Personnel: Onsite medical personnel receive specialized training in the handling of contaminated victims and hospital interface.

i. 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 offsite agencies receive specialized training in the notification process.

j. Corporate Support Personnel: Entergy Nuclear Northeast 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 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
- Classroom and/or hands-on training addressing changes to the PNPS Emergency Response organization, facilities, procedures and equipment
- Drill participation

d. Update Training: In some cases, it may be necessary to provide additional training prior to the annual requalification training. Changes to this Plan, PNPS Emergency Response Organization, procedures, facilities or equipment may require training in an effort to maintain a proficient PNPS Emergency Response Organization.

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

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

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

Module	Curriculum File No.	Module Title
08	PCBT-EP-08	OSC Activation and Response
09	PCBT-EP -09	Senior Emergency Management
10	PCBT-EP -10	Emergency Response Overview
12	PCBT-EP -12	Transition and Recovery
13	PCBT-EP -13	Emergency Public Information
14	PCBT-EP -14	TSC Activation and Response
20	T-ER-01-01-20	OSC Operations for OSC Pool Personnel
30	PCBT-EP -30	Classifications
41	PCBT-EP -41	Emergency Exposure Controls
43	PCBT-EP -43	Offsite Monitoring Team Activation and Response
48	PCBT-EP -48	Personnel Monitoring Team Activation and Response
50	PCBT-EP -50	Communications Support and Equipment Operations
58	T-ER-01-01-58	Emergency Response Training for Security
62	T-ER-01-01-62	OSC and TSC Walkthrough
64	T-ER-01-01-64	EOF Walkthrough
67	T-ER-01-01-67	Joint Information Center (JIC) Walkthrough
70	PCBT-EP -70	Estimating Core Damage
80	PCBT-EP -80	Using DAPAR
81	PCBT-EP -81	Dose Assessment/PARS
85	T-ER-01-01-85	SPDS Introduction
90	T-ER-01-01-90	SAG-01, SAG-02, SAG-21 and TSGs
91	T-ER-01-01-91	Severe Accident Management: Accident Phenominology
92	T-ER-01-01-92	Overview of Severe Accident Guidelines
93	T-ER-01-01-93	Technical Support Guidelines
94	T-ER-01-01-94	Emergency Management Guidelines
129	T-ER-01-01-129	CREP Guidelines
	P-CBT-EP-WEBEC1	Introduction to WebEOC
	P-LP-EP-USWEOC	Using WebEOC
	P-CBT-EP-CONT	Controlling and Evaluating Emergency Drills

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

Position	Module #	Training Required
Dose Assessor	10 64 80 81	Overview EOF Walkthrough Using DAPAR Dose Assessment/PARs
Electrical Engineer	14 62	TSC Activation and Response OSC and TSC Walkthrough
Electrical Pool	20 62	OSC Operations for OSC Pool Personnel OSC and TSC Walkthrough
Electrical/I&C Coordinator	08 62	OSC Activation and Response OSC and TSC Walkthrough
Offsite Communicator	10 50 64	Overview Communications/Notifications EOF Walkthrough
Emergency Director	09 64	Senior Emergency Management Training EOF Walkthrough
Log Keeper	10 64	Overview EOF Walkthrough
EOF Manager	09 64	Senior Emergency Management Training EOF Walkthrough

Section P: Responsibility for the Maintenance of the Planning Effort

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

Emergency Preparedness Staff

1. At least once each calendar year all members of the Emergency Preparedness staff are involved in at least one of the following activities:

    - Training courses specific to emergency preparedness.
    - Training courses related to emergency preparedness management, such as problem solving, stress management or confrontation/media relations courses.
    - Observation of or participation in drills and/or exercises at other utilities.
    - Participation in industry review and evaluation programs.
    - Participation in regional or national emergency preparedness seminars, committees, workshops or forums.
    - PNPS training courses in related areas, such as systems, operations, or radiological protection training.
    - Other relevant training as determined by the Emergency Preparedness 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. Nuclear Safety Assurance Director: The Nuclear Safety Assurance Director is responsible for the maintenance of the PNPS Emergency Preparedness Program. In maintaining the program, the Nuclear Safety Assurance 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.

- 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 Preparedness 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 Preparedness 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 Nuclear Safety Assurance Director is assisted in these responsibilities by the following Emergency Preparedness staff.

Emergency Preparedness Staff

a. The Emergency Preparedness 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.
- 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 Preparedness 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.

Emergency Preparedness Staff

b. Emergency Preparedness 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 Preparedness staff report to the Emergency Preparedness 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.

- Acts as the PNPS Manager in charge of Pilgrim Station's emergency communications equipment.
- Oversees the operation and maintenance of Pilgrim Nuclear Power Station's emergency communications equipment.
- Oversees the operational readiness of PNPS emergency response Facilities (i.e., Emergency Operations Facility (EOF), Operations Support Center (OSC), Technical Support Center (TSC), 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 Nuclear Organization Emergency Notification List (ENL).
- Oversees the maintenance and readiness of Station Prompt Alert Notification System (Sirens).
- Acts as Lead Controller for, and develops and conducts the Station Drill and Exercise Program.
- Investigates and develops summary reports for incidents at the Station classifiable in accordance with the Station's Emergency Plan (i.e., Notification of Unusual Event, Alert, and higher).

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 Preparedness Department at meeting and functions.

- Ensures that the Emergency Preparedness Manager is aware of trends and relationships in community activities and actions.
- Coordinates the development and maintenance of corporate emergency response procedures and training materials with the Entergy Nuclear Northeast Director of Emergency Programs.
- 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 Preparedness Staff Members report to the Emergency Preparedness Manager and are selected based upon qualifications that meet those outlined in position descriptions maintained in Emergency Preparedness 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 Nuclear Safety Assurance 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.).

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 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.

Appendix 1: References

1. 10CFR50.47, Emergency Plans
2. 10CFR50 Appendix E, Emergency Planning and Preparedness for Production and Utilization Facilities
3. 10CFR20, Standards for Protection Against Radiation
4. NUREG-0654, FEMA-REP-1, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants
5. NUREG-0696, Functional Criteria for Emergency Response Facilities
6. EPA-400-B-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents
7. FEMA-Guidance Memorandum, MS-1 "Medical Services"
8. PNPS FSAR
9. PNPS Tech Specs
10. Reg. Guide 1.101, "Emergency Planning & Preparedness for Nuclear Power Plants"
11. Entergy Nuclear Northeast Corporate Emergency Response/Recovery
12. 10CFR50, Appendix R
13. SANDIA 77-1725
14. PNPS Nuclear Training Manual
15. INPO Emergency Resources Manual
16. Nuclear Organization Procedure 88A4, "Assignment of Responsibilities in Support of the PNPS Emergency Preparedness Program"
17. National Response Framework (NRF)
18. Interagency Radiological Assessment Program (IRAP)
19. Entergy Quality Assurance Program Manual
20. PNPS Offsite Dose Calculation Manual (ODCM)
21. USNRC Generic Letter 82-33 dated 12/17/1982
22. ANSI N 18.7 – 1976, American National Standard, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants
23. Federal Register Notice Final Rule, "Consideration of Potassium Iodide in Emergency Plans", Volume 66, Number 13, page 5427, dated January 19, 2001
24. FEMA Guidance Memorandum, "R1-TH-88-19, "Unannounced and Off-hours REP Exercises", dated August 2, 1988
25. Supplement 3,"Criteria for Protective Action Recommendations for Severe Accidents – Draft Report for Interim Use and Comment to NUREG-0654/FEMA REP-1, Rev.1,issued July 1983
26. Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels", revision 5, dated February 2008.

27. 76FR72560, "Enhancements to Emergency Preparedness Regulations", Federal Register, Volume 76, p. 72560, Washington, DC, November 23, 2011

28. Reg. Guide 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors", November, 2011

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

Number	Title	PNPS Emergency Plan Section(s)
EP-IP-100	Emergency Classification and Notification	D.1, D.2, Table D-1, E.1, E.2, E.3, E.4, J.1
EP-IP-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	TSC Operations	B.5, Table B-1
EP-IP-225	Severe Accident Management Support	I.1
EP-IP-261,9.16	TSC/OSC Equipment Operation	B.5, Table B-1
EP-IP-262	OSC Operations	B.5, Table B-1
EP-IP-261, 9.6	Radiological Coordinator	B.5, Table B-1
EP-IP-240	Emergency Security Organization Activation and Response	B.5, Table B-1
EP-IP-261, 9.2	EOF Manager	B.5, C.2.b, Table B-1
EP-IP-261, 9.3	Radiological Assessment Coordinator	B.5, Table B-1
EP-IP-261, 9.5	Administration and Logistics Coordinator	B.5, Table B-1
EP-IP-261, 9.2, 9.25, 9.26	EOF Manager, Alternate EOF Setup, Directions to AEOF	H.2
EP-IP-261, 9.6 and 9.7	Offsite Communicator, EOF Communicator	B.5, F.1
EP-IP-261, 9.27	EOF Equipment Operation	B.5, Table B-1
EP-IP-300	Offsite Radiological Dose Assessment	I.3, I.4
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-330	Core Damage	I.2
EP-IP-400	Protective Action Recommendations	E.3, J.7, J.8
EP-IP-410	Evacuation/Assembly	J.2, J.4, J.5, K.3
EP-IP-420	Search and Rescue	J.5
EP-IP-440	Emergency Exposure Controls	J.6, K.1, K.2
EP-IP-501	Transport of Contaminated Injured Personnel	K.5, L.1, L.4
EP-IP-520	Transition and Recovery	M.1, M.2, M.3, M.4
EP-PI-XXX	Emergency Public Information Procedure Set	G.3, G.4

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, EN-AD-101.01	Emergency Preparedness Controlled Documents, NMM Procedure Writer Manual	P.4
EP-AD-110	Emergency Preparedness Department Organization and Responsibilities	P.1, P.2, P.3
EN-LI-102	Corrective Action Process	N.5
EP-AD-122	Maintenance of the Emergency Telephone Directory	P.10
EP-AD-133	Emergency Public Information Program	G-1, G-2
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
EP-AD-302	Facilities and Equipment Surveillances	F.3, H.10
EN-EP-310 EP-AD-302	Emergency Response Organization Notification System, Facility and Equipment Surveillances	E.1, E.2
EP-AD-413	Emergency Communications Test	F.3, N.2.a
PNPS 8.E.71	Surveillance, Maintenance, and Calibration of the MeDAP Equipment	H.8
EP-AD-601	Emergency Action Levels Technical Basis Document	D.1, D.2, I.1, I.4, J.7

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

PNPS EMERGENCY PLAN

AGREEMENT

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

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

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

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

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

The Company hereby agrees to indemnify, defend, and hold harmless Jordan Hospital 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 the hospital, shall be deemed or construed by either of them, or by third persons, (1) to create any relationship whatsoever involving the Company including, but not limited to, employment, agency or contractor relationships between the Company and an employee or authorized representative of the hospital, or except as provided above, (2) to create any right on the part of the hospital or any third person with respect tot he Company and its property.

Signed this 12th day of September, 2001.

Entergy Nuclear Generation Company	Jordan Hospital, Inc.
By [signature]	By [signature]
Its VP	Its President + CEO

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

ENTERGY NUCLEAR GENERATION COMPANY
EXPENSE REIMBURSEMENT AGREEMENT

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

The Company 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 17th day of July, 2001.

ENTERGY NUCLEAR GENERATING COMPANY

BY: [signature]

ITS: Vice President, Operations

MORTON HOSPITAL AND MEDICAL CENTER, INC.

BY: [signature]

ITS: President

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

May 15, 2001

Mr. Jack Alexander
Nuclear Assessment Director
Entergy
Plymouth, MA 02360

Dear Mr. Alexander:

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

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

Sincerely,

Robert J. Pomeroy
Chief of Police

cc: Entergy Folder

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

TOWN OF PLYMOUTH
FIRE DEPARTMENT
114 Sandwich Street
Plymouth, Massachusetts 02360
FAX (508) 830-4174
(508) 830-4213

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

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

1. Plymouth Fire Department will provide Fire Protection Assistance for the Pilgrim Station site.

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

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

2. Plymouth Fire Department will provide rescue assistance for the site area.

3. Plymouth Fire Department will provide emergency ambulance service.

1 of 2

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AGREEMENT - Page 2 of 2

Plymouth Fire Department-Entergy Nuclear

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

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

APPROVED ENTERGY NUCLEAR
PILGRIM NUCLEAR POWER STATION

Name [signature]
Title VP
Date 5/10/01

APPROVED PLYMOUTH FIRE DEPT.

Name [signature]
Title Chief
Date May 9 2001

agreeEN.TF/lkwpp

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 Coady

Bonnette E. Harington

Simon M. Gaumer

Date: May 17, 2000

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

BSC
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,

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

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^2 ..... square centimeter
CR ..... Control Room
Cs ..... Cesium
DAPAR ..... Dose Assessment and Protective Action Recommendation
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
ENN ..... Entergy Nuclear Northeast
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

Appendix 4: Glossary of Terms (Cont.)

I ..... Iodine
ICP ..... Incident Command Post
INPO ..... Institute of Nuclear Power Operations
IRAP ..... Interagency Radiological Assistance Program
Li ..... Lithium
LOCA ..... Loss of Coolant Accident
MDPH ..... Massachusetts Department of Public Health
MEMA ..... Massachusetts Emergency Management Agency
mR ..... milliroentgen
NOP ..... Nuclear Organization Procedure
NRC ..... U. S. Nuclear Regulatory Commission
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
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

Appendix 5: Evacuation Time Estimates

THIS APPENDIX IS CONTAINED IN ANOTHER VOLUME
AND HAS LIMITED DISTRIBUTION