

Attachment 1

Letter Number 2.18.063

Response to Request for Additional Information - License Amendment Request to Revise the
Pilgrim Nuclear Power Station Emergency Plan and Emergency Action Level Scheme to
Address the Permanently Defueled Condition

A U.S. Nuclear Regulatory Commission (NRC) request for additional information (RAI) regarding a license amendment request to revise the Pilgrim Nuclear Power Station (PNPS) Site Emergency Plan (SEP) was received by Entergy Nuclear Operations, Inc. (ENO) via electronic mail (email) dated October 12, 2018. ENO responses to the RAI request are provided below.

NRC REQUEST

By application dated August 1, 2018, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18218184), Entergy Nuclear Operations, Inc., submitted changes to the site emergency plan (SEP) and emergency action level (EAL) scheme for the Pilgrim Nuclear Power Station (PNPS) for Commission review and prior approval pursuant to Section 50.90 of Title 10 of the Code of Federal Regulations (10 CFR). The proposed changes would revise the SEP and EAL scheme to reflect a permanently defueled condition.

The NRC staff has reviewed the licensee's submittal and determined that additional information is required to enable the NRC staff to make an independent assessment regarding its technical review.

NRC RAI-PNPS-1

Evaluation Criterion E.4 in Attachment 1 to NSIR/DPR-ISG-02 provides guidance on the contents of emergency messages based on the permanently shutdown and defueled condition of the facility, and includes that licensee will communicate a "[m.] request for any needed onsite support by offsite organizations." However, the content of messages, as described in Section 5.1.2, "Commonwealth and Local Government Notification," to Enclosure 1 of Entergy's August 1, 2018 letter, does not appear to address this criterion.

Please describe the method being used by the licensee for conveying this information to State and local organizations, or basis for not addressing this criterion in emergency message content.

ENO Response to RAI-PNPS-1

The commercial telephone network and the emergency messages described in Section 5.1.2 of the Permanently Defueled Emergency Plan (PDEP), "Commonwealth and Local Government Notification," are used to request any needed onsite support from offsite organizations. The list of information contained in the emergency messages, provided in Section 5.1.2 of the proposed PDEP, has been revised to specifically include a request for any needed support from offsite organizations. The revisions to the proposed PDEP are included in Attachment 2 of this response.

NRC RAI-PNPS-2

Evaluation Criteria N.1.a and b in Attachment 1 to NSIR/DPR-ISG-02 state, in part:

- a. An exercise is an event that tests the integrated capability and a major portion of the basic elements existing within emergency preparedness plans and organizations. Exercises shall be conducted as set forth in 10 CFR 50, as exempted, and in*

accordance with applicable portion to Section IV.G (Challenging Drills and Exercises) to NSIR/DPR-ISG-01, "Emergency Planning for Nuclear Power Plants."

- b. The scenario should be varied from year to year such that all major elements of the plans and preparedness organizations are tested.*

Please explain why there is no provision in Section 14.0, "Exercises and Drills," to Enclosure 1, page 25, of Entergy's August 1, 2018 letter, for exercises and drills being conducted as set forth in 10 CFR 50, and in accordance with applicable portion to Section IV.G to NSIR/DPR-ISG-01, for the scenario to be varied from year to year.

ENO Response to RAI-PNPS-2

PNPS conducts exercises and drills in accordance with 10 CFR Part 50 and will continue to conduct exercises and drills as set forth in 10 CFR Part 50, as exempted, including the provision that exercise scenarios be varied from year to year, to the extent practicable, such that all major elements of the plans and preparedness organizations are tested. Section 14.0 of the PDEP, "Exercises and Drills," is revised to clarify that exercise and drills will be conducted as set forth in 10 CFR Part 50, and in accordance with applicable portion to Section IV.G to NSIR/DPR-ISG-01, for the scenario to be varied from year to year. The revisions to the proposed PDEP are included in Attachment 2 of this response.

NRC RAI-PNPS-3

Nuclear Energy Institute (NEI) 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," dated November 2012 (ADAMS Accession Number ML12326A805) was endorsed by the NRC by letter dated March 28, 2013 (ADAMS Accession Number ML12346A463).

In "Recognition Category PD EAL Bases," to Attachment 1, page 21, PD-AA1, EAL 3 states: "Analysis of a liquid effluent sample indicates a concentration or release rate that would result in doses greater than 10 mrem TEDE or 50 mrem thyroid CDE at or beyond the site boundary." However, it does not include the following NEI language – "for one hour of exposure," nor is any justification provided for the difference.

Please explain why the reference NEI language is not included.

ENO Response to RAI-PNPS-3

The referenced NEI language was unintentionally omitted and is added to the Permanently Defueled Emergency Action Level Technical Bases Document (Enclosure 2 of the LAR). These revisions are included in Attachment 3 of this response. Conforming changes are also made to the Permanently Defueled Emergency Action Level Scheme Matrix (Enclosure 3 of the LAR) and the Comparison Matrix for Permanently Defueled EALs Based on NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors," Revision 6 (Attachment 2 of the LAR) and are included in Attachments 4 and 5 of this response, respectively.

NRC RAI-PNPS-4

In "Recognition Category PD EAL Bases," to Attachment 1, page 28, PD-HU1, the following NEI language is absent: "Escalation of the emergency classification level would be via IC PD-HA1," nor is any justification provided for the difference.

Please explain why the reference NEI language is not included.

ENO Response to RAI-PNPS-4

The basis language provided in NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors," Revision 6 (NEI 99-01) for Permanently Defueled Emergency Action Level (PD EAL) PD-HU1 includes the statement, "Security events assessed as HOSTILE ACTIONS are classifiable under IC PD-HA1." This language is present in the PNPS Basis for PD-HU1. The statement, "Escalation of the emergency classification level would be via IC PD-HA1," appeared redundant, and was not included in the PNPS Basis. The Comparison Matrix for Permanently Defueled EALs Based on NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors," Revision 6, included as Attachment 2 of the LAR, included a Comparison column that stated that PNPS site-specific basis information was included. However, omission of this statement was not specifically addressed.

To better align with NEI 99-01, the referenced NEI language is added to the Permanently Defueled Emergency Action Level Technical Bases Document (Enclosure 2 of the LAR). These revisions are included in Attachment 3 of this response. Conforming changes are also made to Attachment 2 of the LAR and included in Attachment 5 of this response.

Attachment 2

Letter Number 2.18.063

Revised Pages of the PNPS Permanently Defueled Emergency Plan
(Enclosure 1 of the LAR)

PNPS PERMANENTLY DEFUELED EMERGENCY PLAN

5.1.1 Emergency Response Organization Activation

On-site staff are informed of an emergency condition through the use of the facility public address system, office telephone, and/or wireless devices capable of receiving telephone calls and text messages. In the event that personnel required to staff ERO positions are not on-site at the time an emergency is declared, they may be contacted by commercial telephone including land lines and/or wireless devices capable of receiving telephone calls and text messages. Mobilization of the ERO will be conducted under the direction of the Emergency Director, according to personnel assignments and telephone numbers maintained in various telephone directories.

5.1.2 Commonwealth and Local Government Notification

Notification to the responsible Commonwealth and Town of Plymouth authorities is required within 60 minutes of the emergency classification. The commercial telephone network serves as the primary means to provide emergency notification to Commonwealth and Town of Plymouth agencies. It is used to provide initial and updated notifications and for general information flow between these agencies.

PNPS, in coordination with the Commonwealth of Massachusetts, have established the contents of the initial emergency messages to be sent from PNPS in the event an emergency is declared. These messages contain the following information if it is known and appropriate:

- Notification Type, i.e. "This is a Drill" or "This is an Actual Event."
- Identity of caller and receiver of call
- The date and time of classification and notification
- Emergency classification
- EAL identification and whether a release is in progress
- Wind direction and speed
- Response actions underway
- Request for any needed onsite support by offsite organizations
- Prognosis for worsening or termination of event based on facility information

In the event the commercial telephone system is unavailable, wireless communications can be used to make emergency notifications. In addition, electronic means may be used to transmit the notification message.

PNPS PERMANENTLY DEFUELED EMERGENCY PLAN

- Documenting all proceedings of the event and reviewing the effectiveness of the emergency organization in reducing public hazard and plant damage

When plant conditions allow a transition from the emergency phase to the recovery phase, the Emergency Director conducts a plant emergency management meeting to discuss the recovery organization. The actions taken by this organization concerning termination of the emergency proceeds in accordance with a recovery plan developed specifically for the accident conditions.

14.0 EXERCISES AND DRILLS

Periodic exercises are conducted to evaluate major portions of emergency response capabilities. Periodic drills are conducted to develop and maintain key emergency response skills. Deficiencies as a result of exercises or drills are identified and corrected.

Exercises and drills shall be conducted as set forth in 10 CFR Part 50, as exempted, and in accordance with applicable portion to Section IV.G to NSIR/DPR-ISG-01, "Emergency Planning for Nuclear Power Plants."

14.1 Exercises

Biennial exercises shall be conducted to test the timing and content of implementing procedures and methods and to ensure that emergency personnel are familiar with their duties. Offsite organizations are offered the opportunity to participate to the extent assistance would be expected during an emergency declaration. However, participation by offsite organizations is not required, nor are offsite response organizations evaluated.

14.2 Drills

Communication checks with offsite agencies, fire drills, medical drills, radiological monitoring drills and health physics drills are performed as indicated in the following sections.

14.2.1 Medical Drills

Medical emergency drills, involving an individual who is simulated to be injured and contaminated, are conducted at least annually. The local ambulance service and Beth Israel Deaconess Hospital - Plymouth are invited to participate in an annual exercise and/or scheduled drill(s) to demonstrate and practice the receipt and treatment of contaminated patients. Involvement by hospital and medical transport services may be included as part of any drill or exercise.

14.2.2 Accountability Drills

An accountability drill shall be conducted annually. This drill shall include identifying the locations of all personnel onsite. This drill can be performed as part of any drill or exercise.

PNPS PERMANENTLY DEFUELED EMERGENCY PLAN

- Objective(s)
- Date, time period, place and participating organizations
- Simulation lists
- Timeline of real and simulated events
- A narrative summary
- List of controllers and participants

The scenario varies year to year. Within an eight-year period, the scenario content is varied to test all the major elements of the Emergency Preparedness Program.

The final scenario shall be approved by a designated member of senior facility management. Drill/Exercise confidentiality must always be maintained.

14.4 Critique/Evaluation

Critiques will evaluate the participant's performance during a drill or exercise. The ability of participants to self-evaluate weaknesses and identify areas of improvement is the key to successful exercise/drill conduct.

Exercise and drill performance objectives are evaluated against measurable demonstration criteria. As soon as possible following the conclusion of each drill/exercise, a critique, including participants, controllers, and evaluators, is conducted to evaluate the ability of the participants to meet the performance objectives. Deficiencies are identified and entered into the corrective action system.

A written report is prepared including the evaluation of designated objectives. The report evaluates and documents the participants' response to the emergency situation. The report will also contain reference to corrective action and recommendations resulting from the drill/exercise.

15.0 RADIOLOGICAL EMERGENCY RESPONSE TRAINING

Radiological emergency response training is provided to those who may be called on to assist in an emergency. PNPS Management is responsible to ensure all members of the Emergency Response Organization receive the required initial training and continuing training.

15.1 Emergency Response Training

The training program for ERO personnel is based on applicable requirements of Appendix E to 10 CFR Part 50 and position-specific responsibilities as defined in the PDEP. Emergency response personnel in the following categories receive initial training and annual retraining.

Attachment 3

Letter Number 2.18.063

Revised Pages of the Permanently Defueled Emergency Action Level
Technical Bases Document
(Enclosure 2 of the LAR)

3. Analysis of a liquid effluent sample indicates a concentration or release rate that would result in doses greater than 10 mrem TEDE or 50 mrem thyroid CDE at or beyond the site boundary for one hour of exposure.
4. Field survey results indicate **EITHER** of the following at or beyond (site-specific dose receptor point):
 - Closed window dose rates greater than 10 mR/hr expected to continue for 60 minutes or longer.
 - Analyses of field survey samples indicate thyroid CDE greater than 50 mrem for one hour of inhalation.

PNPS Basis:

This IC addresses a release of gaseous or liquid radioactivity that results in projected or actual offsite doses greater than or equal to 1% of the EPA Protective Action Guides (PAGs). It includes both monitored and un-monitored releases. Releases of this magnitude represent an actual or potential substantial degradation of the level of safety of the facility as indicated by a radiological release that significantly exceeds regulatory limits (e.g., a significant uncontrolled release).

Radiological effluent EALs are also included to provide a basis for classifying events and conditions that cannot be readily or appropriately classified on the basis of facility conditions alone. The inclusion of both facility condition and radiological effluent EALs more fully addresses the spectrum of possible accident events and conditions.

The TEDE dose is set at 1% of the EPA PAG of 1,000 mrem while the 50 mrem thyroid CDE was established in consideration of the 1:5 ratio of the EPA PAG for TEDE and thyroid CDE.

Classification based on effluent monitor readings assumes that a release path to the environment is established. If the effluent flow past an effluent monitor is known to have stopped due to actions to isolate the release path, then the effluent monitor reading is no longer valid for classification purposes.

The radiation monitor that detects gaseous radioactivity effluent release to the environment is the Reactor Building Ventilation Exhaust (RBVE) monitors RM-1705-32A/B on Panel C910 (ref. 1).

Complete assumptions and inputs for these EAL threshold values are documented from the calculation in PNPS082-CALC-001 Revision 0, PD-AAL Gaseous Effluent EAL Threshold (ref. 2).

The threshold of $> 2.75E5$ is limited to a maximum value of $8E+5$ cps to assure an on-scale readable value.

EAL #3 addresses the threat from the impact of an aircraft on the facility. The NRC Headquarters Operations Officer (HOO) will communicate to the licensee if the threat involves an aircraft. The status and size of the plane may also be provided by NORAD through the NRC. Validation of the threat is performed in accordance with PNPS 5.3.14.1, "Airborne Threat" (Ref. 2.)

Escalation of the emergency classification level would be via IC PD-HA1.

PNPS Basis Reference(s):

1. PNPS 5.3.14m "*Security Incidents*"
2. PNPS 5.3.14.1, "*Airborne Threat*"

Attachment 4

Letter Number 2.18.063

Revised Pages of the Permanently Defueled Emergency Action Level
Scheme Matrix
(Enclosure 3 of the LAR)

		ALERT	UNUSUAL EVENT																												
A Abnormal Rad Levels / Rad Effluent	Effluent Radiation	<p>PD-AA1 Release of gaseous or liquid radioactivity resulting in offsite dose greater than 10 mrem TEDE or 50 mrem thyroid CDE.</p> <p>EMERGENCY ACTION LEVEL (EAL): (1 or 2 or 3 or 4)</p> <p>NOTES</p> <ul style="list-style-type: none"> The Emergency Director should declare the Alert promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. If an ongoing release is detected and the release start time is unknown, assume that the release duration has exceeded 15 minutes. If the effluent flow past an effluent monitor is known to have stopped due to actions to isolate the release path, then the effluent monitor reading is no longer valid for classification purposes. The pre-calculated effluent monitor values presented in EAL #1 should be used for emergency classification assessments until the results from a dose assessment using actual meteorology are available. <p>1. Reading on ANY Table A-1 effluent radiation monitor that is greater than the reading shown in column "Alert" for 15 minutes or longer.</p> <table border="1" style="width: 100%; text-align: center;"> <caption>Table A-1 Effluent Monitor Classification Thresholds</caption> <thead> <tr> <th colspan="2">Release Point</th> <th>Monitor</th> <th>Alert</th> <th>UE</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">GASEOUS</td> <td>Rx Bldg Vent Exhaust</td> <td>RM-1705-32A/B (Panel C910 – units of cps)</td> <td>2.75E5 cps</td> <td>2X HI-HI Alarm</td> </tr> <tr> <td>Radwaste Discharge Effluent</td> <td>RM-1705-30 (Panel C910 – units of cps)</td> <td>N/A</td> <td>2X HI-HI Alarm</td> </tr> </tbody> </table> <p>2. Dose assessment using actual meteorology indicates doses greater than 10 mrem TEDE or 50 mrem thyroid CDE at or beyond the site boundary.</p> <p>3. Analysis of a liquid effluent sample indicates a concentration or release rate that would result in doses greater than 10 mrem TEDE or 50 mrem thyroid CDE at or beyond the site boundary for one hour of exposure.</p> <p>4. Field survey results indicate EITHER of the following at or beyond (site-specific dose receptor point):</p> <ul style="list-style-type: none"> Closed window dose rates greater than 10 mR/hr expected to continue for 60 minutes or longer. Analyses of field survey samples indicate thyroid CDE greater than 50 mrem for one hour of inhalation. 	Release Point		Monitor	Alert	UE	GASEOUS	Rx Bldg Vent Exhaust	RM-1705-32A/B (Panel C910 – units of cps)	2.75E5 cps	2X HI-HI Alarm	Radwaste Discharge Effluent	RM-1705-30 (Panel C910 – units of cps)	N/A	2X HI-HI Alarm	<p>PD-AU1 Release of gaseous or liquid radioactivity greater than 2 times Offsite Dose Calculation Manual (ODCM) limits for 60 minutes or longer.</p> <p>EMERGENCY ACTION LEVEL (EAL): (1 or 2)</p> <p>NOTES</p> <ul style="list-style-type: none"> The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. If an ongoing release is detected and the release start time is unknown, assume that the release duration has exceeded 60 minutes. If the effluent flow past an effluent monitor is known to have stopped due to actions to isolate the release path, then the effluent monitor reading is no longer valid for classification purposes. <p>1. Reading on ANY Table A-1 effluent radiation monitor greater than 2 times the alarm setpoint established by a current radioactivity discharge permit for 60 minutes or longer.</p> <table border="1" style="width: 100%; text-align: center;"> <caption>Table A-1 Effluent Monitor Classification Thresholds</caption> <thead> <tr> <th colspan="2">Release Point</th> <th>Monitor</th> <th>Alert</th> <th>UE</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">GASEOUS</td> <td>Rx Bldg Vent Exhaust</td> <td>RM-1705-32A/B (Panel C910 – units of cps)</td> <td>2.75e5 cps</td> <td>2X HI-HI Alarm</td> </tr> <tr> <td>Radwaste Discharge Effluent</td> <td>RM-1705-30 (Panel C910 – units of cps)</td> <td>N/A</td> <td>2X HI-HI Alarm</td> </tr> </tbody> </table> <p>2. Sample analysis for a gaseous or liquid release indicates a concentration or release rate greater than 2 times the ODCM limits for 60 minutes or longer.</p>	Release Point		Monitor	Alert	UE	GASEOUS	Rx Bldg Vent Exhaust	RM-1705-32A/B (Panel C910 – units of cps)	2.75e5 cps	2X HI-HI Alarm	Radwaste Discharge Effluent	RM-1705-30 (Panel C910 – units of cps)	N/A	2X HI-HI Alarm
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H Hazards	Plant Rad Levels	<p>PD-AA2 UNPLANNED rise in facility radiation levels that impedes facility access required to maintain spent fuel integrity.</p> <p>EMERGENCY ACTION LEVEL (EAL): (1 or 2)</p> <p>1. UNPLANNED dose rate greater than 15 mR/hr in ANY of the following areas requiring continuous occupancy to maintain control of radioactive material or operation of systems needed to maintain spent fuel integrity:</p> <ul style="list-style-type: none"> Main Control Room (RIS-1815-2A, Panel C911) Central Alarm Station (CAS) (by survey) <p>2. UNPLANNED Area Radiation Monitor readings or survey indicate a rise by 100 mR/hr over NORMAL LEVELS that impedes access to ANY of the following areas needed to maintain control of radioactive material or operation of systems needed to maintain spent fuel integrity:</p> <ul style="list-style-type: none"> Aux Bay 3' elevation Reactor Building 117' elevation, Refueling Floor Reactor Building 74' elevation, North Reactor Building 91' elevation, South and West 	<p>PD-AU2 UNPLANNED rise in facility radiation levels.</p> <p>EMERGENCY ACTION LEVEL (EAL): (1 or 2)</p> <p>1.</p> <ol style="list-style-type: none"> UNPLANNED water level drop in the spent fuel pool as indicated by ANY of the following: <ul style="list-style-type: none"> "SPENT FUEL POOL LEVEL LO" (C903R-B2) "FUEL POOL LOW LEVEL" (C39-F1) UNPLANNED rise in area radiation levels as indicated by the following radiation monitor: <ul style="list-style-type: none"> Spent Fuel Pool Area (RIS-1815-3F) <p>2. Area Radiation monitor reading or survey result indicates an UNPLANNED rise of 25 mR/hr over NORMAL LEVELS.</p>																												
	Security	<p>PD-HA1 HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat within 30 minutes.</p> <p>EMERGENCY ACTION LEVEL (EAL): (1 or 2)</p> <p>1. A HOSTILE ACTION is occurring or has occurred within the OWNER CONTROLLED AREA as reported by the Station Security Force.</p> <p>2. A validated notification from NRC of an aircraft attack threat within 30 minutes of the site.</p>	<p>PD-HU1 Confirmed SECURITY CONDITION or threat.</p> <p>EMERGENCY ACTION LEVEL (EAL): (1 or 2 or 3)</p> <p>1. A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by the Station Security Force.</p> <p>2. Notification of a credible security threat directed at the site.</p> <p>3. A validated notification from the NRC providing information of an aircraft threat.</p>																												
H Hazards	Natural & Destructive Phenomena	None	<p>PD-HU2 Hazardous event affecting equipment necessary for spent fuel cooling.</p> <p>EMERGENCY ACTION LEVEL (EAL):</p> <p>1.</p> <ol style="list-style-type: none"> The occurrence of ANY of the following hazardous events: <ul style="list-style-type: none"> Seismic event (earthquake) Internal or external flooding event High winds or tornado strike FIRE EXPLOSION Seawater bay level > +13'6" MSL (LI-3831A/B) Seawater bay level < -13'9" MSL (LI-3831A/B) Other events with similar hazard characteristics as determined by the Control Room Supervisor The event has damaged at least one train of a system needed for spent fuel cooling. The damaged system train(s) cannot, or potentially cannot, perform its design function based on EITHER <ul style="list-style-type: none"> Indications of degraded performance VISIBLE DAMAGE 																												
	Judgment	<p>PD-HA3 Other conditions exist which in the judgment of the Emergency Director warrant declaration of an Alert.</p> <p>EMERGENCY ACTION LEVEL (EAL):</p> <p>1. Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the facility 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.</p>	<p>PD-HU3 Other conditions exist which in the judgment of the Emergency Director warrant declaration of an Unusual Event.</p> <p>EMERGENCY ACTION LEVEL (EAL):</p> <p>1. Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which indicate a potential degradation of the level of safety of the facility or indicate 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 systems needed to maintain spent fuel cooling occurs.</p>																												
S System Malfunction	None	None	<p>PD-SU1 UNPLANNED spent fuel pool temperature rise.</p> <p>EMERGENCY ACTION LEVEL (EAL):</p> <p>1. UNPLANNED spent fuel pool temperature rise to greater than 125 °F.</p>																												
E ISFSI	None	None	<p>E-HU1 Damage to a loaded cask CONFINEMENT BOUNDARY.</p> <p>EMERGENCY ACTION LEVEL (EAL):</p> <p>1. Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by an on-contact radiation reading greater than EITHER the following:</p> <ol style="list-style-type: none"> 60 mrem/hr (gamma + neutron) on the top of the OVERPACK <p style="text-align: center;">OR</p> <ol style="list-style-type: none"> 600 mrem/hr (gamma + neutron) on the side of the OVERPACK, excluding inlet and outlet ducts 																												

PERMANENTLY DEFUELED CONDITIONS

IC/EAL Identifier
PD or E-XX## - Example (PD-HA1.2)

Pilgrim Nuclear Power Station
Emergency Action Level Matrix

Category (A, H, S, E) EAL number
 Emergency Classification (A, U) Category escalation series number

Attachment 5

Letter Number 2.18.063

Revised Pages of the Comparison Matrix for Permanently Defueled EALs Based on NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors," Revision 6
(Attachment 2 of the LAR)

ATTACHMENT 2 to Letter No. 2.18.035

NEI 99-01 Rev 6 Appendix C – Permanently Defueled Station ICs/EALs	Proposed Permanently Defueled EAL for PNPS	Comparison																				
<p>1) Reading on ANY of the following radiation monitors greater than the reading shown for 15 minutes or longer:</p> <p>(site-specific monitor list and threshold values)</p> <p>2) Dose assessment using actual meteorology indicates doses greater than 10 mrem TEDE or 50 mrem thyroid CDE at or beyond (site-specific dose receptor point).</p> <p>3) Analysis of a liquid effluent sample indicates a concentration or release rate that would result in doses greater than 10 mrem TEDE or 50 mrem thyroid CDE at or beyond (site-specific dose receptor point) for one hour of exposure.</p> <p>4) Field survey results indicate EITHER of the following at or beyond (site-specific dose receptor point):</p> <ul style="list-style-type: none"> • Closed window dose rates greater than 10 mR/hr expected to continue for 60 minutes or longer. • Analyses of field survey samples indicate thyroid CDE greater than 50 mrem for one hour of inhalation. 	<p>1. Reading on ANY Table A-1 effluent radiation monitor that is greater than the reading shown in column "Alert" for 15 minutes or longer.</p> <table border="1" data-bbox="761 446 1457 803"> <thead> <tr> <th colspan="5">Table A-1 Effluent Monitor Classification Thresholds</th> </tr> <tr> <th colspan="2">Release Point</th> <th>Monitor</th> <th>Alert</th> <th>NOUE</th> </tr> </thead> <tbody> <tr> <td>Gaseous</td> <td>Rx Bldg Vent Exhaust</td> <td>RM-1705-32A/B (Panel C910 – units of cps)</td> <td>2.75E5 cps</td> <td>2X HI-HI Alarm</td> </tr> <tr> <td>Liquid</td> <td>Radwaste Discharge Effluent</td> <td>RM-1705-30 (Panel C910 – units of cps)</td> <td>N/A</td> <td>2X HI-HI Alarm</td> </tr> </tbody> </table> <p>2. Dose assessment using actual meteorology indicates doses greater than 10 mrem TEDE or 50 mrem thyroid CDE at or beyond the site boundary.</p> <p>3. Analysis of a liquid effluent sample indicates a concentration or release rate that would result in doses greater than 10 mrem TEDE or 50 mrem thyroid CDE at or beyond the site boundary for one hour of exposure.</p> <p>4. Field survey results indicate EITHER of the following at or beyond (site-specific dose receptor point):</p> <ul style="list-style-type: none"> • Closed window dose rates greater than 10 mR/hr expected to continue for 60 minutes or longer. • Analyses of field survey samples indicate thyroid CDE greater than 50 mrem for one hour 	Table A-1 Effluent Monitor Classification Thresholds					Release Point		Monitor	Alert	NOUE	Gaseous	Rx Bldg Vent Exhaust	RM-1705-32A/B (Panel C910 – units of cps)	2.75E5 cps	2X HI-HI Alarm	Liquid	Radwaste Discharge Effluent	RM-1705-30 (Panel C910 – units of cps)	N/A	2X HI-HI Alarm	<ul style="list-style-type: none"> • Added additional site-specific information regarding radiation monitors and annunciator panels and references for the information added. • Included Table A-11 to provide effluent monitor description and threshold values, and show escalation path. • Added "site boundary" as the site specific dose receptor point.
Table A-1 Effluent Monitor Classification Thresholds																						
Release Point		Monitor	Alert	NOUE																		
Gaseous	Rx Bldg Vent Exhaust	RM-1705-32A/B (Panel C910 – units of cps)	2.75E5 cps	2X HI-HI Alarm																		
Liquid	Radwaste Discharge Effluent	RM-1705-30 (Panel C910 – units of cps)	N/A	2X HI-HI Alarm																		

ATTACHMENT 2 to Letter No. 2.18.035

<p align="center">NEI 99-01 Rev 6 Appendix C – Permanently Defueled Station ICs/EALs</p>	<p align="center">Proposed Permanently Defueled EAL for PNPS</p>	<p align="center">Comparison</p>
<p>Timely and accurate communications between Security Shift Supervision and the Control Room is essential for proper classification of a security-related event. Classification of these events will initiate appropriate threat-related notifications to plant personnel and OROs.</p> <p>Security plans and terminology are based on the guidance provided by NEI 03-12, <i>Template for the Security Plan, Training and Qualification Plan, Safeguards Contingency Plan [and Independent Spent Fuel Storage Installation Security Program]</i>.</p> <p>EAL #1 references (site-specific security shift supervision) because these are the individuals trained to confirm that a security event is occurring or has occurred. Training on security event confirmation and classification is controlled due to the nature of Safeguards and 10 CFR § 2.39 information.</p> <p>EAL #2 addresses the receipt of a credible security threat. The credibility of the threat is assessed in accordance with (site-specific procedure).</p> <p>EAL #3 addresses the threat from the impact of an aircraft on the plant. The NRC Headquarters Operations Officer (HOO) will communicate to the licensee if the threat involves an aircraft. The status and size of the plane may also be provided by NORAD through the NRC. Validation of the threat is performed in accordance with (site-specific procedure).</p>	<p>events will initiate appropriate threat-related notifications to facility personnel and OROs.</p> <p>Security plans and terminology are based on the guidance provided by NEI 03-12, <i>Template for the Security Plan, Training and Qualification Plan, Safeguards Contingency Plan [and Independent Spent Fuel Storage Installation Security Program]</i>.</p> <p>EAL #1 references the Station Security Force because these are the individuals trained to confirm that a security event is occurring or has occurred. Training on security event confirmation and classification is controlled due to the nature of Safeguards and 10 CFR § 2.39 information.</p> <p>EAL #2 addresses the receipt of a credible security threat. The credibility of the threat is assessed in accordance with PNPS 5.3.14, "Security Incidents" (Ref. 1.)</p> <p>EAL #3 addresses the threat from the impact of an aircraft on the facility. The NRC Headquarters Operations Officer (HOO) will communicate to the licensee if the threat involves an aircraft. The status and size of the plane may also be provided by NORAD through the NRC. Validation of the threat is performed in accordance with PNPS 5.3.14.1, "Airborne Threat" (Ref. 2.)</p> <p>Escalation of the emergency classification level would be via IC PD-HA1.</p> <p>PNPS Basis Reference(s):</p> <ol style="list-style-type: none"> 1. PNPS 5.3.14, "Security Incidents" 2. PNPS 5.3.14.1, "Airborne Threat" 	