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LETTER NUMBER: 2.18.066

November 30, 2018

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

SUBJECT: Response to Request for Additional Information – Exemption from the Requirements of 10 CFR 50.47 and Appendix E to 10 CFR Part 50, Entergy Nuclear Operations, Inc. Pilgrim Nuclear Power Station

Pilgrim Nuclear Power Station
Docket 50-293
Renewed License No. DPR-35

- REFERENCES:
1. Entergy Nuclear Operations, Inc. letter to NRC, "Request for Exemptions from Portions of 10 CFR 50.47 and 10 CFR Part 50 Appendix E," dated July 3, 2018 (ADAMS Accession No. ML18186A635)
 2. NRC email to Entergy Nuclear Operations, Inc., "RAIs – Pilgrim EP Exemption," dated October 16, 2018 (ADAMS Accession No. ML18289A407)

Dear Sir or Madam:

In Reference 1, Entergy Nuclear Operations, Inc. (ENO) submitted a request to the Nuclear Regulatory Commission (NRC) for exemption from portions of 10 CFR 50.47 and 10 CFR Part 50 Appendix E for Pilgrim Nuclear Power Station (PNPS).

In Reference 2, the NRC requested additional information concerning the exemption request.

Attachment 1 to this letter provides the ENO response to the NRC request for additional information (RAI). Attachment 2 provides revised pages of the exemption request. These revised pages supersede the original pages in their entirety.

This RAI response does not impact the conclusions of the no significant hazards evaluation or the environmental considerations evaluation presented in Reference 1.

A copy of this submittal has been provided to the designated Commonwealth of Massachusetts officials.

If you have any questions or require additional information, please contact Mr. Peter J. Miner at (508) 830-7127.

ADD1
NRR

This letter contains no new commitments and no revisions to existing commitments.

Sincerely,

A handwritten signature in cursive script that reads "Mandy K. Halter".

Mandy K. Halter

MKH/dd/mjp

Attachments:

1. Response to Request for Additional Information – Request for Exemptions from Portions of 10 CFR 50.47 and 10 CFR Part 50, Appendix E for the Pilgrim Nuclear Power Station
2. Revised Pages of the PNPS Request for Exemptions from Portions of 10 CFR 50.47 and 10 CFR Part 50 Appendix E

cc:

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NRC Senior Resident Inspector
Pilgrim Nuclear Power Station

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ATTACHMENT 1

Response to Request for Additional Information

**Request for Exemptions from Portions of 10 CFR 50.47 and 10 CFR Part 50, Appendix E
for the Pilgrim Nuclear Power Station**

5 pages follow

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A Nuclear Regulatory Commission (NRC) request for additional information (RAI) regarding a request for exemptions from portions of 10 CFR 50.47 and 10 CFR Part 50, Appendix E for the Pilgrim Nuclear Power Station (PNPS) was received by Entergy Nuclear Operations, Inc. (ENO) via electronic mail (email) dated October 16, 2018. ENO responses to the RAI request are provided below.

NRC REQUEST

By letter dated July 3, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18186A635), Entergy Nuclear Operations, Inc. requested an exemption from specific emergency planning requirements of Title 10 of the Code of Federal Regulations (10 CFR) Part 50 for the Pilgrim Nuclear Power Station (PNPS), based on the proposed permanent cessation of power operations and removal of fuel from the reactor vessel, which is expected no later than June 1, 2019. The exemption request has been reviewed against the requirements in 10 CFR 50.47, "Emergency plans," and Appendix E to 10 CFR Part 50, "Emergency Planning and Preparedness for Production and Utilization Facilities," using the guidance provided in Interim Staff Guidance (ISG) NSIR/DPR-ISG-02, "Emergency Planning Exemption requests for Decommissioning Nuclear Power Plants" (ADAMS Accession No. ML14106A057). The review considered the storage of the spent nuclear fuel in the spent fuel pool (SFP) and the onsite independent spent fuel storage installation, and the low likelihood of any credible accident resulting in radiological releases requiring offsite protective measures.

Based on the NRC staff's initial review of PNPS's EP exemption request, the following requests for additional information (RAIs) are required to facilitate completion of the staff's technical review.

NRC RAI-PNPS-1

The exemption for item 1 in Table 1 (Attachment 1), page 6 of 72, states:

10 CFR 50.47(b) The onsite ~~and, except as provided in paragraph (d) of this section, offsite~~ emergency response plans for nuclear power reactors must meet the following standards:

In the basis for the exemption PNPS states, that:

PNPS maintains procedures and strategies for the movement of any necessary portable equipment that will be relied upon for mitigating the loss of SFP water. These mitigative strategies, addressing events involving a loss of SFP cooling and/or water inventory, include implementation of SFP inventory makeup strategies required under 10 CFR 50.54(hh)(2), which will continue to be maintained to satisfy applicable License Conditions of the Renewed Facility Operating License. These diverse strategies provide defense-in-depth and ample time to provide makeup water or spray to the SFP prior to the onset of zirconium

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cladding ignition when considering very low probability beyond design basis events affecting the SFP. The on-shift individuals described in the Permanently Defueled Emergency Plan will be able to implement the necessary tasks within the required timeframe.

Staff Decommissioning Assumptions (SDA) 1 in Table 5, "PNPS Compliance with NSIR/DPR-ISG-02 Staff Decommissioning Assumptions (SDAs)," (Attachment 1), page 61 of 72, states:

Licensee's SFP cooling design will be at least as capable as that assumed in the risk assessment, including instrumentation. Licensees will have at least one motor-driven and one diesel-driven fire pump capable of delivering inventory to the SFP.

Also, in the response to SDA1 PNPS states, in part, that:

The SFP has redundant cooling pumps, redundant heat exchangers, and multiple make-up sources, in addition to the normal condensate transfer system. The additional sources include tie-ins to the Firewater system, with Jockey pump P-146, Electric pump P-135, and diesel driven pump P-140. The make-up source for the firewater is a Municipal water system.

Please provide additional details regarding the diverse mitigation strategies, to include the identification of the trained on-shift personnel designated for carrying out the necessary tasks and the timeframe for implementation of these diverse mitigation strategies.

ENO Response to RAI-PNPS-1

As indicated on Table 2.1, On-Shift and Emergency Response Organization Staffing Requirements, of the Pilgrim Nuclear Power Station Permanently Defueled Emergency Plan (PDEP) provided to the NRC in Reference 1, the Control Room Supervisor, Non-Certified Operator and Radiation Protection Technician are required to direct or perform site-specific mitigation strategies required for a catastrophic loss of SFP inventory.

As indicated in the Response to IDC-4, provided in Table 4 of the Exemption Request (Reference 2), following permanent shut down and permanent removal of fuel from the reactor vessel, the on-shift plant operators, including Certified Fuel Handlers (CFH) and Non-Certified Operators, will be appropriately trained on the relevant procedures and on the various actions needed to provide makeup to the SFP to ensure appropriate personnel receive initial and continuing training on B.5.b event-related procedures and strategies credited in applicable License Conditions required by 10 CFR 50.54(hh)(2).

On May 22, 2018, Pilgrim performed a validation exercise demonstrating that the B.5.b SFP Spray Strategy could be performed with designated personnel. The timeframe was determined to be 95 minutes. The PDEP staffing table identifies the individuals in the on-shift crew responsible for implementing the mitigation activities.

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NRC RAI-PNPS-2

The exemption for item 11 in Table 1, "Exemptions Requested from 10 CFR 50.47(b) and 50.47(c)(2)," (Attachment 1), page 9 of 72, states:

~~10 CFR 50.47(b)(10): A range of protective actions has been developed **for the plume exposure pathway EPZ** for emergency workers **and the public**. **In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate. Evacuation time estimates have been developed by applicants and licensees. Licensees shall update the evacuation time estimates on a periodic basis. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.**~~

However, the guidance in Table 1, "Exemptions for Consideration," in NSIR/DPR-ISG-02 states:

~~10 CFR 50.47(b)(10): A range of protective actions has been developed **for the plume exposure pathway EPZ** for emergency workers and the public. **In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate. Evacuation time estimates have been developed by applicants and licensees. Licensees shall update the evacuation time estimates on a periodic basis. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.**~~

Please provide justification for the exemption of the "and the public" as this is not consistent with the guidance and past precedent.

ENO Response to RAI-PNPS-2

The phrase "and the public" was unintentionally included in the proposed exemption language. The Request for Exemptions from Portions of 10 CFR 50.47 and 10 CFR Part 50 Appendix E will be revised such that "and the public" is not included as part of the exemption request. This revision is included in Attachment 2 of this response.

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NRC RAI-PNPS-3

The exemption for item 40 in Table 2, "Exemptions Requested from 10 CFR 50, Appendix E," (Attachment 1), page 24 of 72, states:

C.2 By ~~June 20, 2012~~, nuclear power reactor licensees shall establish and maintain 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 shall promptly declare the emergency condition as soon as possible following identification of the appropriate emergency classification level.

Also, the exemption for item 43 in Table 2 (Attachment 1), pages 26 – 27 of 72, states, in part:

D.3. A licensee shall have the capability to notify responsible State and local governmental agencies ~~within 15 minutes~~ after declaring an emergency.

In the basis for the exemption for both item 40 and item 43, PNPS states, in part, that:

During these meetings have included discussions of the regulatory exemption requests. PNPS will continue to meet with representatives from the Commonwealth of Massachusetts, local emergency preparedness personnel, and Regional leadership from FEMA. These discussions have addressed changes to onsite and offsite emergency preparedness throughout the decommissioning process, including the proposed 30-minute declaration time and the 60-minute notification time. **Emergency management officials have not objected to the proposed changes.**

Please provide documentation that the Commonwealth of Massachusetts and the Town of Plymouth is in agreement with the proposed 30-minute declaration time and the 60-minute timeframe for notification.

ENO Response to RAI-PNPS-3

We have engaged representatives of the Town of Plymouth and the Commonwealth of Massachusetts to obtain written documentation of concurrence with the proposed 30-minute declaration time and the 60-minute timeframe for notification. Although we have had further discussions subsequent to receipt of the request for information, we have not yet secured written documentation. We anticipate providing concurrence from the Town of Plymouth and the Commonwealth of Massachusetts by February 15, 2019.

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NRC RAI-PNPS-4

The exemption for item 104 in Table 2 (Attachment 1), page 45 of 72, states:

Footnotes 3, 4, 5, and 6 are proposed for exemption.

The basis for the exemption, states:

ENO considers PNPS to be exempt from Footnotes 3, 4, 5, and 6 because PNPS will be exempt from the umbrella provisions of Section F.2.

Please provide further justification for Footnote 3 as it is not exempt from the umbrella provisions of Section F.2.

ENO Response to RAI-PNPS-4

Footnote 3 will be removed from the exemption request. The Request for Exemptions from Portions of 10 CFR 50.47 and 10 CFR Part 50 Appendix E will be revised such that Footnote 3 is not included as part of the exemption request. This revision is included in Attachment 2 of this response.

References

1. Entergy Nuclear Operations, Inc. letter to NRC, "License Amendment Request to Revise the Pilgrim Nuclear Power Station Emergency Plan and Emergency Action Level Scheme to Address the Permanently Defueled Condition," dated August 1, 2018 (ADAMS Accession No. ML18218184)
2. Entergy Nuclear Operations, Inc. letter to NRC, "Request for Exemptions from Portions of 10 CFR 50.47 and 10 CFR Part 50 Appendix E," dated July 3, 2018 (ADAMS Accession No. ML18186A635)

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ATTACHMENT 2

**Revised Pages of the PNPS Request for Exemptions from Portions of 10 CFR 50.47
and 10 CFR Part 50 Appendix E**

(Attachment 1 of the Exemption Request)

3 pages follow

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<u>Table 1</u>		
Exemptions Requested from 10 CFR 50.47(b) and 50.47(c)(2)		
Item #	Regulation in 10 CFR 50.47	Basis for Exemption
		Also see the basis for 10 CFR 50.47(b).
7	10 CFR 50.47(b)(6): Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.	See the basis for 10 CFR 50.47(b).
8	10 CFR 50.47(b)(7): Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors); [T]he principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established.	See the basis for 10 CFR 50.47(b).
9	10 CFR 50.47(b)(8): Adequate emergency facilities and equipment to support the emergency response are provided and maintained.	No exemption is requested.
10	10 CFR 50.47(b)(9): Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.	See the basis for 10 CFR 50.47(b).
11	10 CFR 50.47(b)(10): A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use	In the unlikely event of a SFP accident, the iodine isotopes which contribute to an offsite dose from an operating reactor accident are not present, so potassium iodide (KI) distribution offsite would no longer serve as an effective or necessary supplemental protective action. Protective actions will be maintained for emergency workers

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<u>Table 2</u>		
Exemptions Requested from 10 CFR 50, Appendix E		
Item #	Regulation in Part 50, Appendix E	Basis for Exemption
		<p>fuel at the facility in a manner that is protective of public health and safety. PNPS will maintain a level of emergency response that does not require additional response by headquarters personnel. The on-shift and emergency response positions are defined in the Permanently Defueled Emergency Plan and will be regularly tested through drills and exercises, audited, and inspected by PNPS and the NRC.</p> <p>Also see the basis for 10 CFR 50.47(b). Therefore, exempting licensee's headquarters personnel from training requirements is considered to be reasonable.</p>
78	F.1.ix. Security personnel.	No exemption is requested.
79	F.1. In addition, a radiological orientation training program shall be made available to local services personnel; e.g., local emergency services/ Civil Defense , local law enforcement personnel, local news media persons .	<p>Because there will no longer be any expected actions that must be taken by the public during an emergency, it is no longer necessary to pre-plan the dissemination of this information to the public or to provide radiological orientation training to local news media persons.</p> <p>The phrase "Civil Defense" is no longer a commonly used term and is no longer applicable as an example in the regulation.</p>
80	F.2. The plan shall describe provisions for the conduct of emergency preparedness exercises as follows: Exercises shall test the adequacy of timing and content of implementing procedures and methods, test emergency equipment and communications networks, test the public alert and notification system , and ensure that emergency organization personnel are familiar with their duties. ³³	<p>PNPS analyses demonstrate that 10 months after permanent cessation of power operations, no remaining postulated accidents at PNPS will result in radiological releases requiring offsite protective actions, or in the event of beyond design basis accidents, 10 hours is available to take mitigative actions, and if needed, implement offsite protective actions using a comprehensive emergency management plan. Therefore, the public alert and notification system will not be used and no testing would be required.</p>

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<u>Table 2</u>		
Exemptions Requested from 10 CFR 50, Appendix E		
Item #	Regulation in Part 50, Appendix E	Basis for Exemption
	<p>near real-time electronic data link between the licensee's onsite computer system and the NRC Operations Center that provides for the automated transmission of a limited data set of selected parameters. The ERDS supplements the existing voice transmission over the Emergency Notification System (ENS) by providing the NRC Operations Center with timely and accurate updates of a limited set of parameters from the licensee's installed onsite computer system in the event of an emergency. When selected plant data are not available on the licensee's onsite computer system, retrofitting of data points is not required. The licensee shall test the ERDS periodically to verify system availability and operability. The frequency of ERDS testing will be quarterly unless otherwise set by NRC based on demonstrated system performance.</p> <p>2. Except for Big Rock Point and all nuclear power facilities that are shut down permanently or indefinitely, onsite hardware shall be provided at each unit by the licensee to interface with the NRC receiving system. Software, which will be made available by the NRC, will assemble the data to be transmitted and transmit data from each unit via an output port on the appropriate data system.</p>	<p>necessary to transmit safety system parameter data. No exemption is requested because this change in the ERDS data requirement is identified in 10 CFR Part 50, Appendix E, Section VI.2.</p>
104	<p>10 CFR 50 Appendix E</p> <p>Footnotes 3, 4, 5, and 6 are proposed for exemption.</p> <p>³Use of site specific simulators or computers is acceptable for any exercise.</p> <p>⁴Full participation when used in conjunction with emergency preparedness exercises for a particular site means appropriate</p>	<p>ENO considers PNPS to be exempt from Footnotes 3, 4, 5, and 6 because PNPS will be exempt from the umbrella provisions of Section F.2.</p>