UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 28, 2016

Mr. John Dent, Jr.
Site Vice President
Entergy Nuclear Operations, Inc.
Pilgrim Nuclear Power Station
600 Rocky Hill Road
Plymouth, MA 02360-5508

SUBJECT: PILGRIM NUCLEAR POWER STATION - ISSUANCE OF AMENDMENT RE: CHANGES TO THE EMERGENCY PLAN TO REVISE TRAINING REQUIREMENTS FOR THE ON-SHIFT CHEMISTRY TECHNICIAN (CAC NO. MF7283)

Dear Mr. Dent:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 245 to Renewed Facility Operating License No. DPR-35 for the Pilgrim Nuclear Power Station (Pilgrim). This amendment consists of changes to the Pilgrim Emergency Plan to revise the training requirements for the on-shift Chemistry Technician in response to your application dated January 14, 2016.

This amendment reduces the level of Emergency Response Organization staff training for the on-shift Chemistry Technician to support on-shift Radiation Protection Technician functions at the onset of a radiological event. The amendment also revises paragraph 3.B of the Renewed Facility Operating License.

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* Notice.

Sincerely,

for,

Booma Venkataraman, Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosures:
1. Amendment No. 245 to Renewed License No. DPR-35
2. Safety Evaluation

cc: Listserv

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ENTERGY NUCLEAR GENERATION COMPANY

AND ENTERGY NUCLEAR OPERATIONS, INC.

PILGRIM NUCLEAR POWER STATION

DOCKET NO. 50-293

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 245
Renewed License No.
DPR-35

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment filed by Entergy Nuclear Operations, Inc. (the licensee) dated January 14, 2016, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

Enclosure

2. Accordingly, by Amendment No. 245, the license is amended by changes to the Emergency Plan as set forth in the licensee's application dated January 14, 2016 and as evaluated in the NRC staff's safety evaluation for this amendment, and Paragraph 3.B of Renewed Facility Operating License No. DPR-35 is hereby amended to read as follows:

   B. Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 245, are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance and shall be implemented within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Michele G. Evans for

William M. Dean, Director
Office of Nuclear Reactor Regulation

Attachment:
Changes to Renewed Facility
Operating License No. DPR-35

Date of Issuance: October 28, 2016

PILGRIM NUCLEAR POWER STATION

ATTACHMENT TO LICENSE AMENDMENT NO. 245

RENEWED FACILITY OPERATING LICENSE NO. DPR-35

DOCKET NO. 50-293

Replace the following page of the Renewed Facility Operating License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove	Insert
Page 3	Page 3

provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:

A. Maximum Power Level

ENO is authorized to operate the facility at steady state power levels not to exceed 2028 megawatts thermal.

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 245, are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

C. Records

ENO shall keep facility operating records in accordance with the requirements of the Technical Specifications.

D. Equalizer Valve Restriction – DELETED

E. Recirculation Loop Inoperable – DELETED

F. Fire Protection

ENO shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility and as approved in the SER dated December 21, 1978 as supplemented subject to the following provision:

ENO may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

G. Physical Protection

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contain Safeguards Information protected under 10 CFR 73.21, is entitled: "Pilgrim Nuclear Power Station Physical Security, Training and Qualification, and Safeguards Contingency Plan, Revision 0" submitted by letter dated October 13, 2004, as supplemented by letter dated May 15, 2006.

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee's CSP was approved by License Amendment No. 236, as supplemented by changes approved by: Amendment Nos. 238, 241, and 244.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 245

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-35

ENTERGY NUCLEAR GENERATION COMPANY

AND ENTERGY NUCLEAR OPERATIONS, INC.

PILGRIM NUCLEAR POWER STATION

DOCKET NO. 50-293

1.0 INTRODUCTION

By application dated January 14, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16021A459) (Reference 1), Entergy Nuclear Operations, Inc. (Entergy, the licensee) submitted proposed changes to the Pilgrim Nuclear Power Station (Pilgrim) Site Emergency Plan (SEP) for U.S. Nuclear Regulatory Commission (NRC) approval pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.54(q)(4).

The proposed changes would reduce the level of Radiation Protection (RP) Technician Emergency Response Organization (ERO) training for the on-shift Chemistry Technician to support the on-shift RP Technician function/position at the onset of a radiological event. Specifically, Entergy proposed that the scope of the RP Technician ERO training for the on-shift Chemistry Technician be limited to the following general support tasks during the first 30 minutes of ERO augmentation:

1) Perform on-site radiation surveys;
2) Perform on-site contamination surveys;
3) Set up the Operations Support Center (RP Technician work area); and
4) Issue dosimetry.

2.0 REGULATORY EVALUATION

The regulatory requirements and guidance applicable to this Safety Evaluation (SE) are as follows.

2.1 Regulations

10 CFR 50.47, "Emergency Plans," sets forth emergency plan requirements for nuclear power plant facilities. The regulations in 10 CFR 50.47(a)(1)(i) state, in part, that:

> ...no initial operating license for a nuclear power reactor will be issued unless a finding is made by the NRC that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

As described in 10 CFR 50.47(a)(2), the NRC will base its finding, in part, on an assessment as to whether the applicant's onsite emergency plans are adequate and whether there is reasonable assurance that they can be implemented.

The following regulatory requirements are applicable to this SE:

- 10 CFR 50.47(b)(2), which states, in part, that:

  > ...adequate staffing to provide initial facility accident response in key functional areas is maintained at all times [and] timely augmentation of response capabilities is available....

- 10 CFR 50.47(b)(15), which states that:

  > Radiological emergency response training is provided to those who may be called on to assist in an emergency.

- 10 CFR Part 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization facilities," Section IV, Part A, "Organization," which states, in part, that:

  > The organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization....

- 10 CFR Part 50, Appendix E, Section IV, A.9, which states, in part, that:

  > ...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.

- 10 CFR Part 50, Appendix E, Section IV, Part F, "Training," which states, in part, that:

  > The program to provide for: (a) The training of employees and exercising, by periodic drills, of emergency plans to ensure that employees of the licensee are familiar with their specific emergency response duties....

2.2 Guidance

Regulatory Guide 1.101, Revision 2, "Emergency Planning and Preparedness for Nuclear Power Reactors" (Reference 2), provides guidance on methods acceptable to the NRC staff for complying with 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. Regulatory Guide 1.101 endorses 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" (NUREG-0654) (Reference 3).

NUREG-0654, Section II, "Planning Standards and Evaluation Criteria," provides the specific acceptance criteria, listed below, for complying with the standards set forth in 10 CFR 50.47(b)(2) and (b)(15). These criteria provide a basis for NRC licensees and State and local governments to develop acceptable radiological emergency plans.

- Section II.B, "Onsite Emergency Organization," Evaluation Criteria II.B.1 states that:

  > Each licensee shall specify the onsite emergency organization of plant staff personnel for all shifts and its relation to the responsibilities and duties of the normal shift complement.

- Section II.B, Evaluation Criteria B.5 states, in part, that:

  > Each licensee shall specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1 entitled, "Minimum Staffing Requirements for Nuclear Power Plant Emergencies." The minimum on-shift staffing levels shall be as indicated in Table B-1. The licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency. This capability shall be as indicated in Table B-1....

- Section II.O, "Radiological Emergency Response Training," Evaluation Criteria O.4 states, in part, that:

  > Each organization shall establish a training program for instructing and qualifying personnel who will implement radiological emergency response plans....

The Nuclear Energy Institute (NEI) document NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," Revision 0 (Reference 4), provides guidance to licensees to address the emergency planning requirements of 10 CFR Part 50, Appendix E, IV.A.9.

3.0 TECHNICAL EVALUATION

The NRC staff reviewed the regulatory and technical analyses supporting the licensee's proposed changes, as described in the application dated January 14, 2016. The NRC staff's technical evaluation is detailed below.

3.1 Background

By letter dated April 1, 1981 (Reference 5), the licensee (formerly the Boston Edison Company) submitted a version of the Pilgrim SEP, which provided, in part, that:

> To meet Technical Specification (Reference 12, Section N.10) requirement of having at least one member of the operating shift "qualified to implement radiation protection procedures," at least one Health Physics Technician will be assigned each shift.

In July 1982, the NRC conducted an appraisal (inspection) of the state of emergency preparedness at Pilgrim. As a result of the inspection, the NRC requested that the licensee delineate the command hierarchy, reporting chains, and function interrelationships down to the working level, and the relationships between normal job assignments and emergency tasks. This request was documented in Appraisal Report Number 50-293/81-15 (Reference 6). In a letter to the NRC dated November 1, 1982 (Reference 7), the licensee provided a report of the actions taken pursuant to the appraisal and specifically the changes made in Section N.5, "Organizational Control of Emergencies," of the Pilgrim SEP. In March 1983, a subsequent NRC Appraisal Report No. 50-293/83-05 (Reference 8) concluded that the emergency organization personnel with emergency functions required during the initial and augmentation phases of the emergency response were in place.

By letter dated January 30, 1991 (Reference 10), the licensee submitted a Revision 10 to the Pilgrim SEP, which added a second RP Technician to the Table B-1 "Minimum Staffing Requirements for the Pilgrim ERO." This was done to better reflect the format of NUREG-0654 Table B-1, "Minimum Staffing Requirements for NRC Licensees for Nuclear Power Plant Emergencies," and involved no actual personnel changes to the on-shift compliment.

By letter dated July 14, 2006 (Reference 11), the licensee proposed to the NRC to substitute the on-shift Chemistry Technician for the second on-shift RP Technician to handle RP Technician ERO responsibilities during the first thirty (30) minutes of an event at the Pilgrim site. As part of that proposal, the licensee would: (1) provide additional training for the on-shift Chemistry Technician(s), and (2) remove the second RP Technician from the on-shift staffing when appropriate training was provided for the Chemistry Technicians. By letter dated February 5, 2007 (Reference 12), the NRC staff determined that the licensee's July 14, 2006, submittal was consistent with the guidance contained in NUREG-0654, and concluded that the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50 continued to be met.

The Table B-1 that was submitted as Attachment 2 to the January 14, 2016, submittal continues to have an ERO augmentation of four (4) additional RP Technicians reporting to the site within 30 minutes, with an additional four (4) more RP Technicians reporting to the site in 60 minutes.

These additional RP Technicians provide support roles in the Accident Assessment and Protective Action functional areas after the first 30 and 60 minutes, respectively.

The basis for the NRC staff's review of the proposed changes to the Pilgrim SEP is described below.

3.2 Major Functional Areas

The NRC staff performed a technical review against the regulatory requirements and guidance listed in Section 2.0 of this SE for the proposed reduction in the level of Chemistry Technician training that the licensee identified as needed to support initial RP Technician ERO functions.

The licensee proposed that the RP Technician ERO training for the on-shift Chemistry Technician be limited to the following general support tasks, which are needed during the first 30 minutes of ERO augmentation:

- Perform on-site radiation surveys;
- Perform on-site contamination surveys;
- Set up the Operations Support Center (RP Technician work area); and
- Issue dosimetry.

The complete scope of the RP Technician ERO training for the on-shift Chemistry Technician was previously provided in the Entergy letter for the proposed changes to the Pilgrim SEP dated July 14, 2006 (Reference 11), and was subsequently approved by the NRC in its response letter dated February 5, 2007 (Reference 12). A summarized scope of the proposed RP Technician ERO training for the on-shift Chemistry Technician as compared to that approved by the NRC in 2007 can be found in Attachment 3 to the licensee's January 14, 2016, submittal.

The licensee performed an analysis which indicated that the primary responsibility of the on-shift Chemistry Technician is chemistry/radiochemistry sampling. The analysis determined that there were no chemistry sampling tasks noted as being time critical prior to the augmentation of the second Chemistry Technician in 60 minutes for any of the analyzed events. As such, the on-shift Chemistry Technician would be available to assist the RP Technician in performance of directed RP Technician ERO task work in the Operations Accident Assessment or Protective Action functional areas.

The licensee further stated that the analysis performed to support the reduction in the level of training for the on-shift Chemistry Technician to perform RP Technician ERO tasks did not rely on any supplemental training to support initial RP Technician ERO functions within the first 30 minutes. With the revised training scope, the on-shift Chemistry Technician will remain qualified to perform specific RP Technician ERO tasks involving in-plant surveys, Operations Support Center setup, and dosimetry issuance.

Based on its review of the application, as summarized above, the NRC staff finds the proposed change to the level of RP Technician ERO training for the on-shift Chemistry Technician to be acceptable because the licensee's analysis demonstrated that the RP Technician could complete assigned emergency plan functions in a timely manner and that there were no

chemistry sampling tasks noted as being time critical prior to augmentation of the second Chemistry Technician in 60 minutes for any of the analyzed events. Therefore, the NRC staff concludes that the level of the training for the on-shift Chemistry Technician as proposed to be changed continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50.

3.3 Summary

The NRC staff performed a technical review against the applicable regulatory requirements and guidance for the proposed changes to the Pilgrim SEP related to the level of training of the on-shift Chemistry Technician to perform RP Technician ERO tasks as described in Section 3.2 of this SE. The NRC staff's evaluation is based on its consideration of the RP Technician ERO tasks involving in-plant surveys, Operations Support Center setup, and dosimetry issuance that would be supported by the on-shift Chemistry Technician during the first 30 minutes of ERO activation.

The NRC staff finds that the proposed emergency plan changes do not alter the ability of the Pilgrim ERO to perform accident assessment or the licensee's capability to take protective actions as currently described in the Pilgrim SEP. Therefore, the NRC staff finds that the proposed emergency plan changes meet the standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50, and provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. As such, the NRC staff concludes that the proposed change to the level of training for the on-shift Chemistry Technician to perform RP Technician ERO tasks, as provided in the licensee's submittal letter dated January 14, 2016, is acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Massachusetts State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on April 12, 2016 (81 FR 21597). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

7.0 REFERENCES

1. Entergy Letter to the NRC, "Proposed License Amendment Request to Modify Emergency Response Organization (ERO) Training for the On-shift Chemistry Technician," dated January 14, 2016 (ADAMS Accession No. ML16021A459).

2. Regulatory Guide 1.101, Revision 2, "Emergency Planning and Preparedness for Nuclear Power Reactors," published October 1981 (ADAMS Accession No. ML13038A097).

3. NUREG-0654, FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, published November 1980 (ADAMS Accession No. ML040420012).

4. Nuclear Energy Institute 10-05, Revision 0, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," published June 2011 (ADAMS Accession No. ML111751698).

5. Pilgrim Nuclear Power Station Emergency Plan, Revision 0, dated April 1, 1981 (ADAMS Legacy Accession No. 8104210213) (non-public).

6. NRC Appraisal Report 50-293/81-15, dated July 24, 1981 (ADAMS Legacy Accession No. 8301040640).

7. Boston Edison Company Letter to the NRC, "Report of Actions Taken Pursuant to Emergency Preparedness Appraisal 50-293/81-15," dated November 1, 1982 (ADAMS Legacy Accession No. 8301040640).

8. NRC Appraisal Report 50-293/83-05, dated April 6, 1983 (ADAMS Legacy Accession No. 8305050151).

9. Boston Edison Company Pilgrim Nuclear Power Station Emergency Plan, Revision 2, dated June 1, 1985 (ADAMS Legacy Accession No. 8506200306).

10. Boston Edison Company Letter to the NRC, "10 CFR 50, Appendix E, Section V.: Submittal of Revised Emergency Plan or Emergency Plan Implementing Procedures," dated January 30, 1991 (ADAMS Legacy Accession No. 9102070047).

11. Entergy Letter to the NRC, "Emergency Plan Changes to the Minimum Staffing Requirements for the Emergency Response Organization (ERO)," dated July 14, 2006 (ADAMS Accession No. ML062060315) (non-public).

12. Mr. James Kim (USNRC) Letter to Mr. Michael Kansler (Entergy), "Pilgrim Nuclear Power Station - Revision to Emergency Plan to Change Emergency Support Organization Staffing (TAC No. MD2814)," dated February 5, 2007 (ADAMS Accession No. ML070320486).

Principal Contributor: Edward Robinson, NSIR

Date: October 28, 2016

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* Notice.

Sincerely,

/RA/

Booma Venkataraman, Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosures:
1. Amendment No. 245 to Renewed License No. DPR-35
2. Safety Evaluation

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