July 25, 2003

Mr. Michael Balduzzi
Site Vice President
Entergy Nuclear Operations, Inc.
Pilgrim Nuclear Power Station
600 Rocky Hill Road
Plymouth, Massachusetts 02360-5599

SUBJECT: PILGRIM NUCLEAR POWER STATION - NRC INSPECTION REPORT NO. 50-293/03-010

Dear Mr. Balduzzi:

On May 12-15, 2003, the U. S. Nuclear Regulatory Commission (NRC) conducted an emergency preparedness (EP) program inspection at your Pilgrim Nuclear Power Station (PNPS). The NRC then conducted an in-office inspection from May 18-July 2, 2003, of additional information provided by your staff in various forums concerning the ability of your emergency response organization (ERO) to meet the Emergency Plan (E-Plan) minimum and timely staffing requirements for emergencies. The enclosed report documents the program inspection findings, which were discussed on May 15, 2003, with Mr. Mike Bellamy and other members of the PNPS staff. The report also documents the results of our in-office review that were discussed via telephone on June 20, 2003, with you and your staff, and finally on July 2, 2003, between myself and Mr. Tom Sowdon of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspector reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the inspector identified an unresolved item related to the maintenance of timely staff augmentation capabilities during emergencies. The inspector determined that Entergy's established controls may not be capable of meeting the E-Plan minimum and timely staffing requirements for 30 and 60-minute augmented ERO responders, based on 1) emergency plan implementing procedures which do not ensure the minimum required staffing levels for emergency response facility activation, 2) non-pager holder responders being called in manually rather than through use of the automated call-out system as required by the E-Plan, and 3) previously unacceptable off-hours testing of minimum staffing levels.

We appreciate your cooperation in conducting a call-in test on June 30, 2003, in order to demonstrate the capability to augment the ERO in a timely manner as described in the E-Plan. It is our understanding that the test was successful. However, this issue was unresolved pending NRC review of: your June 30, 2003, call-in drill and the associated report, any Entergy program changes deemed necessary to ensure adequate periodic augmentation testing, and the significance and enforceability of the noted issue. The inspector determined that there was

no immediate safety concern from this issue since Entergy had no previous documented problem with minimum staffing during drills conducted during business hours, there were numerous non-pager responders who lived within 60 minutes of the plant site, and Entergy reported a successful test related to full ERO staffing.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/ADAMS.html (the Public Electronic Reading Room).

Should you have any questions regarding this examination, please contact me at (610) 337-5183, or by E-mail at RJC@NRC.GOV.

Sincerely,

/RA/

Richard J. Conte, Chief
Operational Safety Branch
Division of Reactor Safety

Docket No. 50-293
License No. DPR-35

Enclosure: Inspection Report No. 50-293/03-010
W/Attachments: Supplemental Information

cc w/encl:
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W. Riggs, Director, Nuclear Assessment Group
D. Pace, Vice President, Engineering
R. Edington, Vice President, Operations Support
J. Kelly, Director, Nuclear Safety Assurance
C. Faison, Manager, Licensing
Director of Oversight, Entergy Nuclear Operations, Inc.
D. Tarantino, Nuclear Information Manager
B. S. Ford, Manager, Licensing
S. Brennion, Superintendent Regulatory and Industry Affairs
J. Fulton, Assistant General Counsel
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R. Hallisey, Department of Public Health, Commonwealth of Massachusetts
The Honorable Therese Murray
The Honorable Vincent deMacedo
Chairman, Plymouth Board of Selectmen
Chairman, Duxbury Board of Selectmen
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Plymouth Civil Defense Director
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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No:	50-293
License No:	DPR- 35
Report No:	03-010
Licensee:	Entergy Nuclear Operations
Facility:	Pilgrim Nuclear Power Station
Location:	600 Rocky Hill Road Plymouth, MA 02360
Dates:	May 12 - 15, 2003 (Onsite) May 18 - July 2, 2003 (In-office)
Inspector:	J. Laughlin, Operations Engineer W. Raymond, Pilgrim Senior Resident Inspector
Approved by:	Richard J. Conte, Chief Operational Safety Branch Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000293/03-010; 05/12 - 06/20/2003; Pilgrim Nuclear Power Station. Emergency Response Organization Augmentation.

The emergency preparedness (EP) program inspection was performed onsite and in the Region 1 office by a region-based inspector. The inspection identified one unresolved item. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Emergency Preparedness

TBD. The inspector identified that Entergy's established controls including periodic testing did not ensure the capability of meeting the minimum and timely staffing requirements in the E-Plan, Part 2, Section B.1, for 30 and 60-minute augmented ERO responders, based on 1) emergency plan implementing procedures which do not ensure the minimum required staffing levels for emergency response facility activation, 2) non-pager holder responders being called in manually rather than through use of the automated call-out system, and 3) previously inadequate off-hours testing of minimum staffing levels.

This finding was unresolved pending NRC review of the June 30, 2003, call-in drill and its associated report, any Entergy program changes deemed necessary to ensure adequate periodic augmentation testing, and the significance and enforceability of the noted issue. (Section 1EP3)

B. Licensee-Identified Violations

None

Report Details

Emergency Preparedness (EP)

1EP2 Alert and Notification System (ANS) Testing

a. Inspection Scope

The inspector reviewed the Emergency Plan (E-Plan) and documentation regarding the siren system design and approval to determine system testing commitments. He also reviewed siren testing procedures and siren testing documentation to verify compliance with testing commitments, and interviewed the maintenance personnel responsible for ANS testing. Lastly, the inspector observed a demonstration of the licensee's siren control computer located in the emergency operations facility. This computer performs a daily polling of all sirens to ensure proper operation, and may be used as a backup location for system activation.

The inspector conducted the review in accordance with guidance provided in NRC Inspection Procedure 71114, Attachment 02, "Alert and Notification System Testing." The applicable planning standard, 10 CFR 50.47(b)(5) and related requirements in 10 CFR 50 Appendix E, Section IV.D were used as acceptance and reference criteria.

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization (ERO) Augmentation

a. Inspection Scope

The inspector reviewed the licensee's E-Plan commitments for ERO staffing and facility activation. He reviewed staff depth for key ERO positions on the four designated ERO duty teams to ensure that sufficient numbers of responders were available. He also reviewed the licensee's ERO call-out procedure, and discussed it in detail with the EP Manager and his staff. Lastly, the inspector reviewed documentation from the March 2, 1995 unannounced off-hours combined functional drill and the December 6, 2001 unannounced off-hours ERO activation drill to determine if E-Plan minimum staffing requirements could be met.

The inspector conducted this review in accordance with the guidance in NRC Inspection Procedure 71114, Attachment 03, "Emergency Response Organization Augmentation." The applicable planning standard, 10 CFR 50.47(b)(2), related requirements in 10 CFR 50, Appendix E, and the licensee's E-Plan commitments were used as acceptance and reference criteria.

b. Findings

Introduction

The inspector Identified an unresolved item (URI) related to Entergy's established controls, including periodic testing, to ensure the minimum and timely staffing requirements in the E-Plan, Part 2, Table B-1, for 30 and 60-minute (30M and 60M) augmented ERO responders. This raised the question as to whether timely emergency response staffing was available at all times if it is not periodically tested in the following three major functional areas: support of operational accident assessment, plant system repair and corrective actions, and in-plant protective actions.

Description

Entergy's minimum staffing requirements for emergencies are found in the E-Plan, Part 2, Section B. Table B-1 lists the minimum staffing requirements for the PNPS ERO, those positions required to meet minimum augmentation capabilities for the on-shift complement at an Alert or higher classification. This requirement is to augment the shift during an emergency with 32 response personnel, some within 30M and some within 60M. The inspector noted that 21 of the 32 augmented positions are staffed by personnel who are not on duty ERO teams, do not carry pagers, are not required to stay fit for duty, and are not included in the routine pager tests. Using informal procedures such as emergency telephone directories and phone trees, the non-pager holders are called in manually by designated pager holders when the pager holders receive their page. However, this process did not appear to be fully tested specifically in the off hours.

The emergency plan implementing procedures (EPIPs), which implement the E-Plan requirements, require only six of the 21 non-pager personnel to be present for emergency response facility (ERF) activation. The E-Plan, Part 2, Section H.4 states "Although the response time will vary due to factors such as weather and traffic conditions, a goal of 30 minutes for minimum staffing and one hour for full manning has been established for onsite emergency facilities including the EOF." The inspector noted that since the EPIPs do not require all Table B-1 responders to be present in order to consider that the ERFs have achieved full manning, that they do not ensure adequate implementation of E-Plan minimum and timely staffing requirements. Therefore, these established controls for augmenting the shift in an emergency were potentially inadequate.

The E-Plan, Part 2, Section E.2, states, in part, that in addition to the public address system, ERO personnel are notified by pagers or phone calls from the Computerized Automated Notification System (CANS). However, the 21 non-pager personnel who are ERO members do not have pagers and are not called by CANS. Rather, they are called manually by designated pager holders who attempt to contact the responders using "phone trees" located in an emergency telephone directory. For example, the Radiation Protection Coordinator must call in 10 radiation protection (RP) technicians, five who must respond in 30M and five in 60M. This manual call-out appears to be slower than

using the CANS, and could further hinder Entergy from meeting the minimum staffing levels in the required time.

Administrative Procedure EP-AD-200, " Planning and Scheduling of Drills and Exercises," Revision 6, requires that Entergy conduct an off-hours drill or exercise (between 6:00 pm and 4:00 am) once every six years. The inspector reviewed documentation from the March 2, 1995, unannounced off-hours combined functional drill and the December 6, 2001, unannounced off-hours activation drill. The 1995 drill focused on facility activation, not Table B-1 minimum staffing capability. Not all non-pager Table B-1 responders were required to report for this drill. For example, only five out of 10 RP technicians were called in, and there was no documentation available to show that the 30M and 60M reporting times were met.

The 2001 drill required seven non-pager personnel to respond, five to the Media Center and two to the Technical Support Center, but none of these were Table B-1 positions. Although the drill report documented that the ERO mobilized quickly and professionally, again there was no documentation showing arrival times to verify that conclusion. The inspector concluded that these drills were not adequate tests to ensure the capability to meet Table B-1 minimum staffing requirements.

At the conclusion of the onsite inspection, Entergy management acknowledged that the EPIPs did not ensure that all Table B-1 responders would respond in the required time, but felt that their minimum staffing required by the EPIPs was sufficient for an adequate response. They also stated that, although their off-hours augmentation drills did not demonstrate the ability to meet Table B-1 staffing, that there was no NRC requirement to do so.

As of June 6, 2003, Entergy's position was that timely augmentation of response capabilities referred to in 10 CFR 50.47(b)(2) refers to the same key functional areas as the ones filled by on-shift personnel, i.e., SROs, ROs, NPOs, RP technicians, and chemistry technicians, and that timely activation of emergency response facilities (ERFs) with minimum staff for activation meets this requirement. Entergy maintained that during the most recent off-hours drill conducted in December, 2001, augmentation of the key functional areas was demonstrated by activation of the ERFs. But as previously stated, the EPIPs for facility activation do not require all Table B-1 responders to be in place in order to activate the ERFs within 60 minutes. In fact, the EPIPs require only 15 of 32 Table B-1 responders (9 of 11 pager holders, 6 of 21 non-pager holders) to be present for facility activation.

On June 20 , 2003, the inspector informed Entergy that their position on key functional areas related to minimum staffing appeared to be based on a mis-interpretation of NRC regulations and related guidance. The inspector noted that NUREG-0654, Section II.B, "Onsite Emergency Organization," implements 10 CFR 50.47(b)(2). Evaluation Criteria 5 of Section II.B says "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." Table B-1 lists the minimum staffing requirements for the PNPS ERO, and it lists additional functions such as notification/communication, radiological accident

assessment, plant system engineering repair and corrective actions and in-plant protective actions. The inspector further noted that NUREG-0654, Section II.N, "Exercises and Drills," states, in part, that an exercise shall include mobilization of state and local personnel and resources adequate to verify capability to respond to an accident scenario requiring response. It also states that the scenario should be varied from year to year such that all major elements of the plans and preparedness organizations are tested within a five-year period.

Analysis

The inspector questioned the adequacy of ERO staff established controls and periodic testing and, in particular, noted that: 1) the EPIPs do not adequately implement the PNPS E-Plan to ensure timely augmentation of all 32 minimum staffing positions, 2) Entergy does not notify all ERO members by pagers or CANS automated call-out as required by the E-Plan, and 3) Entergy has not performed an acceptable off hours augmentation test. In response to these concerns on June 20, 2003, Entergy agreed to perform an off-hours augmentation test (responders call in, not report in) using their current call-out process in order to demonstrate its ability to meet the Table B-1 minimum and timely staffing requirements. This test was conducted on June 30, 2003, and the data was being tabulated at the conclusion of this inspection. The licensee verbally reported that the test was successful.

This issue is not subject to traditional enforcement because it did not have actual safety consequences, did not impact the NRC's ability to perform its regulatory function (no E-Plan change involved), and there was no evidence of a willful violation. The issue was greater than minor because it could adversely affect the ERO readiness attribute of the EP cornerstone objective of ensuring that the licensee was capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency.

Since the E-Plan does not adequately address testing requirements to ensure timely augmentation of the entire ERO, the inspector could not answer the SDP screening question: "Is the finding associated with a failure to meet or implement a regulatory requirement?" Further, there remained the question as to whether there has ever been an adequate test of Table B-1 commitments aside from the test of June 30, 2003. Accordingly, this analysis could not be completed.

Enforcement

The E-Plan did not clearly address ERO augmentation testing methodology and previous testing did not ensure the timely augmentation of all required minimum staffing positions. Accordingly, the inspector could not determine whether there was a violation of NRC requirements, i.e., the planning standards contained in 10 CFR 50.47(b). Applicable planning standards for this issue are 10 C50.47(b)(2) related to timely staff augmentation and 10 CFR 50.47(b)(14) related to the cycle of drill/exercise testing. This issue is not suitable for SDP evaluation (at this time), but is being reviewed by NRC

management and coordinated with the Office of Enforcement to identify the significance and appropriate disposition.

More specifically, this issue is unresolved pending NRC review of the June 30, 2003, call-in drill and its associated report in order to 1) ensure it reflects adequate implementation of the existing augmentation testing process; 2) determine any Entergy program changes deemed necessary to ensure adequate periodic augmentation testing; and 3) assess the significance and enforceability of the noted issue. The inspector's primary basis for this Unresolved Item is the "acceptability" principle in the definition of an unresolved item per MC 0612. **(URI 50-293/03-010-01)**

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

a. Inspection Scope

The inspector reviewed the December 20, 2001 QA Oversight Program Review of the Emergency Preparedness Program, and all 2002 QA audit surveillances of the EP program, to determine QA-identified deficiencies and whether they were being adequately addressed. He also reviewed two licensee self-assessments: the February 21, 2002 assessment of the licensee's vulnerability to NRC findings issued during 2000-2001, and the February 3, 2003 assessment of the adequacy of EP 10 CFR 50.54(q) evaluations. Lastly, he reviewed condition reports (CRs) assigned to the EP department to determine the significance of issues being identified, if repeat problems were occurring, and that all issues were being corrected.

The inspector conducted these reviews in accordance with Inspection Procedure 71114, Attachment 05. The applicable planning standard, 10 CFR 50.47(b)(14), and the requirements in 10 CFR Appendix E, Section IV.F.2.g, were used as reference criteria.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA6 Meetings, including Exit

The inspector presented the inspection results to Mr. Mike Bellamy, Site Vice President, and other members of licensee management, on May 15, 2003, at the conclusion of the inspection. The licensee acknowledged the findings presented.

On June 20, 2003, the inspector discussed the unresolved item noted above and the related concerns with Mr. Mike Balduzzi and members of his staff. During that call, Entergy committed to conduct a call-in test as noted herein.

On July 2, 2003, Mr. R. Conte, Chief Operational Safety Branch, Region I discussed the unresolved item with Mr. T. Sowden, Entergy EP Manager, and the reason as to why the issue is being left open as denoted herein.

The licensee did not indicate that any of the information presented at the exit meetings was proprietary.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Pilgrim Nuclear Power Station:

M. Bellamy, Site Vice President
B. Ford, Licensing Manager
W. Grieves, Quality Assurance Manager
E. Salomon, Senior Emergency Planner
T. Sowdon, EP Manager
K. Sullivan, Emergency Planner

Nuclear Regulatory Commission:

W. Raymond, Senior Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened:

05000293/03-010-01	URI	Established controls may not be capable of meeting the E-Plan minimum and timely staffing requirements for augmented ERO responders. (Section 1EP3)

Closed:

None.

Discussed:

None.

LIST OF DOCUMENTS REVIEWED

1. Pilgrim Nuclear Power Station Emergency Plan, Rev 26
2. EP-IP-220, “TSC Activation and Response,” Rev 11
3. EP-IP-230, “OSC Activation and Response,” Rev 4
4. EP-IP-250, “EOF Activation and Response,” Rev 9
5. EP-IP-251, “Offsite Radiation Protection,” Rev 5
6. EP-IP-310, “Radiation Monitoring Team Activation and Response,” Rev 5
7. EP-IP-440, “Emergency Exposure Controls,” Rev 7
8. Activation Drill Report (01-06)
9. Combined Functional Drill Report (95-02)

10. NOP88A4, “Assignment of Responsibilities in Support of the PNPS Emergency Preparedness Program,” Rev 6
11. EP-AD-418, “Monthly Testing of the PANS Two-Way System,” Rev 4
12. QA Oversight Program Review 01-03 (EP Program)
13. Assessment LO-PNPLO-2002-00091, “Emergency Preparedness 10 CFR 50.54(q) Evaluations,” 01/06/03
14. “Independent Review of the Pilgrim Nuclear Power Station (PNPS) Emergency Preparedness Program,” 02/21/02

LIST OF ACRONYMS

ANS	Alert Notification System
CFR	Code of Federal Regulations
CR	Condition Report
EOF	Emergency Operations Facility
ERF	Emergency Response Facility
EP	Emergency Preparedness
EPIP	Emergency Plan Implementing Procedure
ERO	Emergency Response Organization
NPO	Nuclear Plant Operator
NRC	Nuclear Regulatory Commission
PNPS	Pilgrim Nuclear Power Station
QA	Quality Assurance
RO	Reactor Operator
RP	Radiation Protection
SDP	Significance Determination Process
SRO	Senior Reactor Operator
URI	Unresolved Item