December 8, 2000

Mr. Robert M. Bellamy
Site Vice President
Entergy Nuclear Generation Company
Pilgrim Nuclear Power Station
600 Rocky Hill Road
Plymouth, Massachusetts 02360-5599

SUBJECT: NRC's PILGRIM INSPECTION REPORT NO. 05000293/2000-009

Dear Mr. Bellamy:

On November 18, 2000, the NRC completed an inspection at your Pilgrim reactor facility. The enclosed report presents the results of that inspection. The results were discussed on November 30, 2000 with Messrs. W. DiCroce and H. Oheim and other members of your staff.

This inspection was an examination of 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. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

There was one green finding identified during this inspection associated with a radwaste shipment. The container did not pass a dryness verification test. This shipment did not exceed any regulatory radiation limits; however, this finding was determined to be a violation of NRC requirements because the container was found to have free standing liquid. The violation was not cited due to its very low safety significance and because the finding was entered into your corrective action program. If you contest this noncited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region 1; the director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-001; and the NRC Resident Inspector at the Pilgrim facility.

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

Sincerely,

/RA by
Robert J. Summers
Acting For/

James Linville, Chief
Projects Branch 6
Division of Reactor Projects

Docket No.: 05000293
License No.: DPR-35

Enclosure: Inspection Report 05000293/2000-009

cc w/encl:
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REGION I

Docket No:	50-293
License No:	DPR-35
Report No:	05000293/2000-009
Licensee:	Entergy Nuclear Generation Company
Facility:	Pilgrim Nuclear Power Station
Location:	600 Rocky Hill Road Plymouth, MA 02360
Inspection Period:	October 1, 2000, through November 18, 2000
Inspectors:	R. Laura, Senior Resident Inspector R. Arrighi, Resident Inspector J. Furia, Senior Health Physicist G. Smith, Senior Physical Security Inspector
Approved By:	James Linville, Chief Projects Branch 6 Division of Reactor Projects

SUMMARY OF FINDINGS

IR05000293-2000-009; on10/1-11/18/2000;Entergy Nuclear Generation Company; Pilgrim Nuclear Power Station. Public Radiation Safety.

The inspection was conducted by resident inspectors, a senior health physicist and security specialist. This inspection identified one green finding, which was a noncited violation. The significance of most/all findings are indicated by their color (green, yellow, red) using Inspection Manual Chapter 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "no color" or by the severity level of the applicable violation.

Cornerstone: Public Radiation Safety

- GREEN. The State of South Carolina identified a violation for a disposal container (liner) of dewatered bead resin shipped by the licensee, through a waste processor, to the Barnwell Low-level Waste Disposal Facility. Upon arrival, state inspectors determined that the liner contained in excess of 1% by volume non-corrosive free standing liquid, contrary to the requirements of 10 CFR 61.56(b)(2).

  The finding was of low safety significance because, although the liner contained free-standing liquid in excess of the 1% limit, the deficiency was not sufficient to disallow access to the disposal facility, and no other issues (e.g., transportation requirements, package integrity, Certificate of Compliance, or radiation limits) were involved. Further, institutional controls at the Chem-Nuclear System's Low-Level Waste Disposal Facility in Barnwell, South Carolina, were conservative and would have acted to prevent inadvertent radioisotope migration in the case of inadvertent loss of container integrity while disposed. In accordance with the NRC Enforcement Policy and the Public Radiation Safety Significance Determination Process, this matter is considered a Non-Cited Violation. **(NCV 05000293/2000-09-01)** (Section 2PS2).

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Attachment 1 - NRC's Revised Reactor Oversight Proces

Report Details

SUMMARY OF PLANT STATUS

At the beginning of the period on October 1, 2000, Pilgrim Nuclear Power Station was starting up the reactor following an unplanned shutdown to repair the "A" train fourth point feed water heater. Full power was reached on October 7, 2000. On November 12, 2000, the unit was brought to 50 percent power to perform a thermal backwash of the main condenser and rod timing tests. The unit returned to full power on November 13, 2000.

1. REACTOR SAFETY
(Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity)

1R01 Adverse Weather

a. Inspection Scope

A review was performed to determine the plant readiness for adverse weather due to winds and rough sea conditions that occurred on October 31, 2000 through November 2, 2000. Operators implemented the actions listed in Procedure 2.1.37, Coastal Storm. All intake structure traveling screens were operated at fast speed. The screen-wash was aligned to both the inlet and outlet sides as a precaution. An operator was stationed in the intake structure to closely monitor equipment performance. No significant problems were experienced due to the rough seas.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope

The inspector performed a partial system walkdown of the high pressure coolant injection (HPCI) system after a planned surveillance activity. The walkdown included verification of proper valve position by observing control room valve position indication and visual inspection of valves in the HPCI pump room and auxiliary bay to verify that the system was properly aligned to support normal and emergency plant operation. The inspector also inspected the equipment for any obvious degradation such as oil or pressure boundary leakage.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspector toured selected plant areas important to safety in order to assess Pilgrim's control of transient combustibles and ignition sources, and the material condition and operational status of fire protection system equipment and barriers. The following areas were toured: (1) refueling floor, (2) reactor auxiliary bay, (3) diesel generator room, and (4) the intake structure.

The inspection also consisted of a review of the fire protection system valve line-up and the condition of the fire hoses and fire extinguishers.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspector conducted a walkdown inspection of the reactor building, auxiliary bay rooms and the emergency diesel generator room (EDG) to assess the effectiveness for internal flood control measures. The Updated Final Safety Analysis Report (UFSAR) and the Pilgrim Safety Evaluation Report (SER) 50-84, "Internal Flooding Analysis," were reviewed prior to the walkdown. Special emphasis was placed on the flooding controls for the high pressure coolant injection (HPCI) room, reactor core isolation cooling (RCIC) room and the EDG rooms due to the risk significance of those systems.

Items selected for review during the walkdown included watertight piping penetrations, watertight doors, floor level alarms, and floor sump systems including the sump pumps, limit switches and valve line-ups. Also, passive equipment such as curbing and drains on each elevation in the reactor building were inspected. The grating in the auxiliary bay floor, which discharges into the torus room trough via a loop seal, was inspected and found free of debris. The drain scuppers in the EDG buildings were verified to move freely and were not clogged by foreign debris.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule

a. Inspection Scope

The inspector reviewed the implementation of the maintenance rule as related to the following:

- Radiation monitoring system (RM). The RM system was designated as an (a)(1) system due to several repetitive functional failures and for risk significant power range monitors (PRM) having an unavailability greater than five percent. A RM team was formed with an issue manager to improve RM system performance. Various work requests and engineering modifications were scheduled to be completed by the end of the next refueling outage. The RM system was estimated to return to (a)(2) by October 1, 2001.

- Proper classification of an equipment failure for the failure of the high pressure coolant injection flow controller as documented in problem report PR 00.9347.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspector reviewed the following on-line maintenance work plans/activities to assess the adequacy of the licensee's risk assessment process. The inspector reviewed the plans using the criteria contained in licensee procedure 1.5.21, "Integrated Scheduling Guidelines," and 1.5.22, "Risk Assessment Process." The inspection also included a review of the risk assessments and contingencies established, and verification that the increase in risk was conveyed during the licensee's morning meeting and during shift turnover.

- Maintenance Request (MR) 10001074 to inspect and clean fouling inside the "B" reactor building closed cooling water (RBCCW) heat exchanger (E-209B).

- Planned maintenance outage for motor operated valve work on the "A" loop of the residual heat removal (RHR) system.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspector reviewed the following open operability evaluations (OE) to verify that continued operability was justified. The Pilgrim Updated Final Safety Analysis Report (UFSAR), technical specifications, and licensee procedure 1.3.34.5, "Operability Evaluations," were used as references to assess the adequacy of operability evaluations. The inspector also verified the corrective actions to correct the degraded condition were adequate and either completed or scheduled in the licensee's work control process.

- OE 00-029. Degraded secondary containment reactor building inner truck lock door gasket. This deficiency was identified during a preventive maintenance task on July 24, 2000. The basis of the operability evaluation determined that the gap created due to the degraded gasket was less than the allowable limit in the secondary containment barrier. This OE was rated as a Yellow (moderate) risk significance by the licensee. Work control personnel informed the inspector that corrective actions were planned for March 2001 prior to the start of the next refueling outage scheduled for April 2001. The work request was still being evaluated by the planning group at the end of this inspection.

- OE 00-035. Increased turbo charger oil leakage on the station blackout (SBO) diesel generator. The oil leaks past a seal in the turbo charger and then collects in the exhaust cavity. This deficiency was identified by the licensee on September 27, 2000. This operability evaluation was rated as a Yellow risk significance by the licensee. An engineering modification was scheduled at the next opportunity in the 12 week rotating schedule which will stop the oil leakage.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspector reviewed and observed portions of the following post maintenance tests to ensure that the test activities were adequate to verify operability and functional capability of the system/component following maintenance:

- MR 19701702, Replace reactor core isolation cooling area cooler flex hose
- MR 19701663, Adjust packing for reactor water cleanup vent valve, 12-HO-6B
- MR 10002348, Replace motor for residual heat removal pump “A” torus suction valve, MO-1001-7A

During review of MR 19701663 the inspector identified that the licensee’s retest procedure did not require cycling manual valves after packing adjustments to ensure there is no valve binding. The licensee indicated that they would include this in their maintenance procedure as a good practice.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspector reviewed the following surveillance tests:

- 8.M.2-2.10.11.1, RCIC high water level turbine trip/automatic start logic test
- 8.M.2-2.5.6, HPCI condensate storage tank level functional test
- 8.M.2-2.5.7, Instrument functional/calibration test for HPCI suppression chamber water level
- 8.A.16, RHR system integrity test

The inspector verified that the system requirements were correctly incorporated into the test procedures and that the test acceptance criteria were consistent with the technical specifications, the licensee's Inservice Testing Program and the Updated Final Safety Analysis Report requirements. The review also included an evaluation of the completed surveillance test data to verify that the selected systems and components were capable of performing their intended safety functions.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

a. Inspection Scope

The inspector observed portions of the November 14, 2000, off-year emergency preparedness drill to evaluate the drill and licensee critique. The inspector focused on the event classification and notification, and communication of priorities among the emergency response organizations.

Through observation of the licensee critique the inspector verified that identified problems were entered into the corrective action program (PR 00.3114 and 00.3124).

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY
Cornerstone: Occupational Radiation Safety

2PS2 Radioactive Material Processing and Shipping (71122)

a. Inspection Scope

The inspector reviewed the licensee's facilities, processes and programs for the collection, processing, treatment, shipping, storage and disposal of radioactive materials and radwaste. The inspector conducted reviews of the following: in-plant liquid and solid waste systems; waste processing and sampling program; shipment activities and records; assurance of quality, including corrective action reports; and training.

System reviews were conducted, which included system descriptions, control panel review, facilities tours, and a review of system changes in accordance with 10 CFR 50.59. Systems/subsystems reviewed included: ultrasonic resin cleaner and solid radwaste; radwaste collection; radioactive waste and concentrator; disposable cartridge filter - demineralizer; and, clean-up filter demineralizer. The inspector also toured abandoned in-place radwaste equipment and facilities, and interim storage locations used for processed radwaste. Highly contaminated and/or high dose rate areas toured included the following cubicles: monitor tank room; chemical waste tank room; clean waste tank room; concentrator room; 6x6 room; radiation waste material interface room and, spent resin tank room.

The inspector reviewed the licensee's Process Control Program (PCP), including: PCP procedure (PNPS 1.15.3); process documentation; scaling factor derivation, sampling type, sampling frequency, and effect of changing plant conditions (PNPS 6.9-211); and, determination of waste characteristics and waste classification.

The inspector selected five solid radwaste shipping records (RSR) for detailed review against the requirements contained in 10 CFR Parts 20, 61 and 71, and 49 CFR Parts 100-177. The shipments selected included spent resin, laundry, and dry active waste, and were identified as: RSR20-22, RSR20-27, RSR20-28, RSR20-30, RSR20-31 and RSR20-32. The inspector also conducted direct observations of a receipt of radioactive material and shipment (RSR20-38) of dewatered resins on October 17-18, 2000.

The inspector reviewed the licensee's program for assurance of quality in the radwaste processing and radioactive materials transportation program by reviewing: quality surveillances (00-005, 00-007, 00-033, 00-065, 00-088, 00-089 and QA Oversight Program Review 00-01); departmental self-assessments (entitled "Use of Type B Casks" and "10 CFR 61"); and, three problem reports (PR) involving the radwaste and transportation program in 2000 (PR00-1376, PR00-1910, and PR00-2755).

The inspector reviewed the licensee's program of training for personnel involved in the radwaste and radioactive materials transportation program with regard to the requirements contained in NRC IE Bulletin 79-19 and, Department of Transportation (DOT) 49 CFR, Subpart H. Records reviewed included training requirements, course outlines/training modules, test questions, examinations and examination scores.

Reviewed records were for licensee personnel in materials handling, radiation protection and radwaste.

b. Findings

On May 29, 2000, a State of South Carolina inspector identified that a liner of dewatered spent resin (Shipment No. RSR20-22), sent by the licensee to the Barnwell Low-level Waste Disposal Facility, contained excessive free-standing liquids, in violation of the requirements contained in 10 CFR 61.56(b)(2). This material was originally loaded into a High Integrity Container (liner) at Pilgrim Station in the mid-1990s, and subsequently placed in storage. On May 16, 2000, this liner and another were sent to a waste processor for final dewatering verification, and subsequently shipped for near-surface land disposal at Chem-Nuclear Systems, Incorporated, Barnwell, South Carolina. Upon receipt at the Barnwell facility, this liner was selected for dryness verification testing (a.k.a. punch testing) and determined to have in excess of 1% non-corrosive free standing liquid, contrary to the requirements of 10 CFR 61.56(b)(2). The State of South Carolina subsequently issued a Notice to Pilgrim Station and a monetary fine. Upon notification, the licensee entered this issue into their problem report system as PR-00-1910.

This issue is more than minor in that, if left uncorrected, it could become a more significant safety concern, since free-standing liquid in a disposal container could facilitate radioisotope migration if the integrity of the container was compromised during disposal. This issue relates solely to NRC limits and not licensee administrative limits; and affects the Public Radiation Cornerstone since it involves an occurrence in the licensee's radioactive material transportation program that is contrary to NRC regulations. While this matter did not involve exceeding any regulatory radiation limit, package breach, non-conformance with the applicable Certificate of Compliance, or under-classification of the radioactive waste materials, it did involve a compliance issue relative to 10 CFR Part 61. However, while a low-level burial ground access problem did occur, the deficiency was not sufficient cause to deny access to the facility for this shipment. Further, institutional controls at the Chem-Nuclear System's Low-Level Waste Disposal Facility in Barnwell, South Carolina, were conservative and would have acted to prevent inadvertent radioisotope migration in the case of inadvertent loss of container integrity while disposed. Consequently, there was very low risk significance associated with this violation. In accordance with NRC Enforcement Policy and the Public Radiation Safety Significance Determination Process, this matter is considered a Non-Cited Violation (Green). (NCV 05000293/2000-009-001)

3. SAFEGUARDS

3PP4 Security Plan Changes

Background

An in-office review was conducted of changes to the Physical Security, Contingency, and Training and Qualification Plans, identified as Revisions 15, 7, and 11, respectively, submitted to the NRC on April 17, 2000, in accordance with the provisions of 10 CFR 50.54(p).

a. Inspection Scope (71130.04)

A review of the Plan revisions was conducted to confirm that the changes were made in accordance with 10 CFR 50.54(p), and did not decrease the effectiveness of the Plans.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA3 Event Follow-up

a. Inspection Scope

A very small fire started at 10:25 a.m. on November 11, 2000, during a maintenance activity in the radwaste truck lock area. Specifically, maintenance workers were welding a 22 inch diameter penetration cover over an existing pipe sleeve opening in the radwaste truck lock floor that directly accessed an abandoned cement process room used for shipping radioactive waste below. The welder and fire watch observed light emanating from the room below. The operating shift supervisor declared an Unusual Event at 10:55 a.m. and made the requisite notifications to the local fire department and to the NRC. Normal personnel access into the cement processing room is not allowed since it is a posted high radiation area. At 11:15 a.m., plant workers removed the radwaste truck lock floor penetration cover, which was in the process of being welded, to provide access for the fire hoses. The fire brigade extinguished the fire from above using a water stream from a hand held hose. The fire was declared out at 12:05 p.m. and the Unusual Event was terminated at 12:17 p.m. The NRC Senior Resident Inspector responded to the site and independently verified proper actions to extinguish the fire and to implement the site emergency plan.

The cement processing room contains no safety-related equipment and the fire did not challenge continued plant operation. The cause of the fire was due to weld slag that dropped below the work area in the radwaste truck lock into the cement processing room and ignited some combustible materials. Thus, the fire started in the cement processing room and did not spread beyond the initial location. Visual licensee inspection in the cement processing room revealed some evidence of residue from

Class A combustible materials - paper, clothing and rubber gloves. The fire was estimated to be very small in nature. The licensee initiated a full root cause evaluation to review the circumstances of the fire and to develop and implement corrective actions.

The risk significance of this fire was very low since safe shutdown capability was never challenged. Passive fire barriers, a wall adjacent to the reactor building and the "B" emergency diesel generator building, in the cement processing room performed as designed. The licensee took precautions to ensure ventilation discharge from the cement processing room was directed through a temporary portable filter and then discharged into a normal monitored discharge stream. Also, the small amount of water used to extinguish the fire was contained in the cement processing room which drained to the normal radwaste process via the floor drain system.

The inspector observed that the fire brigade responded effectively to extinguish the fire. Operators properly declared and exited an Unusual Event emergency classification and made the requisite notifications. Proper consideration was given to eliminate any potential for a radiological gaseous release.

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

a. Exit Meeting Summary

The inspectors presented the inspection results to Messrs. W. DiCroce and H. Oheim, and other members of licensee management at the conclusion of the inspection on November 30, 2000. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered propriety. No propriety information was identified.

ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

NCV 05000293/2000-009-001 Excessive free-standing liquids in waste package

LIST OF ACRONYMS USED

ALARA	As Low As is Reasonably Achievable
CFR	Code of Federal Regulations
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EE	Engineering Evaluation
ENS	Emergency Notification System
EOP	Emergency Operating Procedure
HPCI	High Pressure Coolant Injection
LER	License Evaluation Report
LOCA	Loss of Coolant Accident
LPCI	Low Pressure Coolant Injection
MSIV	Main Steam Isolation Valve
MR	Maintenance Request
NPSH	Net Positive Suction Head
PCP	process control program
PMT	Post Maintenance Test
PNPS	Pilgrim Nuclear Power Station
PR	Problem Report
RBCCW	Reactor Building Closed Cooling Water
RCA	Radiologically Controlled Area
RCIC	Reactor Core Isolation Cooling
SER	Safety Evaluation Report
SRO	Senior Reactor Operator
UFSAR	Updated Final Safety Analysis Report

ATTACHMENT 1

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting safety performance at NRC licensed plants.

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
● Initiating Events	● Occupational	● Physical Protection
● Mitigating Systems	● Public	
● Barrier Integrity		
● Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.