December 27, 1999

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-EVALUATED EMERGENCY PREPAREDNESS EXERCISE - INSPECTION REPORT NO. 05000293/99010

Dear Mr. Bellamy:

The enclosed report documents an inspection for public health and safety, led by Mr. D. Silk at Plymouth, Massachusetts. The inspection evaluated the performance of your emergency response organization (ERO) during the December 7, 1999, Pilgrim Nuclear Power Station full-participation exercise. The inspectors discussed the findings of this inspection with you and your staff on December 9, 1999.

Based on the results of this inspection, it was determined that the overall performance of the ERO demonstrated, with reasonable assurance, that onsite emergency plans are adequate and that your organization is capable of implementing them. Simulated events were diagnosed accurately, emergency declarations were timely and accurate, offsite agencies were notified in a timely manner, protective action recommendations were appropriate, mitigation activities were properly coordinated, and the dose assessment staff effectively implemented their procedures.

At the critique, your staff identified issues, in addition to those identified by the NRC. The most significant issues are under consideration for entry into your corrective action program. Overall, the critique was balanced with positive and negative findings and was appropriately self-critical.

No violations of NRC requirement were identified. No response to this letter is required.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

Sincerely,

ORIGINAL SIGNED BY:

Wayne D. Lanning, Director
Division of Reactor Safety

Docket No. 05000293

Enclosure: Inspection Report No. 05000293/99-10

cc w/encl:
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J. Alexander, Director, Nuclear Assessment Group
D. Tarantino, Nuclear Information Manager
S. Brennion, Regulatory Affairs Department Manager
J. Fulton, Assistant General Counsel
R. Hallisey, Department of Public Health, Commonwealth of Massachusetts
The Honorable Therese Murray
The Honorable Vincent DiMacedo
T. MacGregor, Mass. Dept. of Public Comm. & Energy
Chairman, Plymouth Board of Selectmen
Chairman, Duxbury Board of Selectmen
Chairman, Nuclear Matters Committee
Plymouth Civil Defense Director
P. Gromer, Massachusetts Secretary of Energy Resources
J. Miller, Senior Issues Manager
A. Nogee, MASSPIRG
Office of the Commissioner, Massachusetts Department of Environmental Quality Engineering
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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No:	05000293
License No:	DPR-35
Report No:	05000293/99010
Licensee:	Entergy Nuclear Generation Company
Facility:	Pilgrim Nuclear Power Station
Dates:	December 6 - 9, 1999
Inspectors:	D. Silk, Senior Emergency Preparedness Inspector, DRS N. McNamara, Emergency Preparedness Inspector, DRS R. Arrighi, Resident Inspector, Pilgrim Nuclear Power Station, DRP B. Sienel, Resident Inspector, Millstone Nuclear Power Station, DRP T. Walker, Senior Enforcement Specialist, ORA
Approved by:	Richard J. Conte, Chief Human Performance and Emergency Preparedness Branch, Division of Reactor Safety

EXECUTIVE SUMMARY

Pilgrim Nuclear Power Station
Full-Participation Emergency Preparedness Exercise Evaluation
December 7, 1999
Inspection Report Number 05000293/99010

Based on the results of this inspection, it was determined that the overall performance of the emergency response organization demonstrated, with reasonable assurance, that onsite emergency plans are adequate and that the licensee is capable of implementing them. Simulated events were diagnosed accurately, emergency declarations were timely and accurate, offsite agencies were notified in a timely manner, protective action recommendations were appropriate, mitigation activities were properly coordinated and the dose assessment staff effectively implemented their procedures.

At the critique, the licensee identified issues, in addition to those identified by the NRC. The most significant issues are under consideration for entry into the corrective action program. Overall, the critique was balanced with positive and negative findings and was appropriately self-critical.

Report Details

P4 Staff Knowledge and Performance

a. Inspection Scope (IP 82301)

During this inspection, the inspectors observed and evaluated the licensee's biennial full-participation exercise in the simulator control room (SCR), the technical support center (TSC), the operations support center (OSC), and the emergency operations facility (EOF). The inspectors assessed the emergency response organization's (ERO) recognition of abnormal plant conditions, classification of emergency conditions using the emergency action levels (EALs), notification of offsite agencies, development of protective action recommendations (PARs), command and control, communications, utilization of repair and field monitoring teams (FMTs), performance of dose assessment and projections, and the overall implementation of the emergency plan. In addition, the inspectors observed the post-exercise critique to evaluate the licensee's self-assessment of the exercise.

b. Observations and Findings

b.1 SCR

The SCR crew quickly recognized and responded to off-normal conditions. The alert was promptly classified and notification of offsite agencies was timely. The ERO was immediately notified at the alert declaration and began to mobilize to staff their designated emergency facility. Plant data from the SCR was communicated promptly and clearly to the TSC and EOF. Command and control was adequate throughout the exercise however, the turnover between the nuclear watch engineer and the emergency plant operations supervisor did not mention the initial tripping of the "B" reactor feedwater pump. Also, the nuclear operating supervisor briefings to the crew focused on plant status and did not always include reports of ERO activities and priorities in response to the emergency. No adverse effects resulted from these items.

b.2 TSC

The emergency plant manager (EPM) and his staff promptly reported to the TSC following the alert declaration. The TSC staff referred to and implemented the appropriate procedures as soon as they arrived to perform their support functions. The TSC was fully staffed and functional 35 minutes after the alert declaration.

The EPM demonstrated good command and control in the TSC. The EPM briefed the operations, engineering and radiation protection supervisors on plant status as soon as they arrived and all personnel were briefed once the TSC was fully staffed. Plant conditions were reviewed approximately every 30 minutes by the TSC supervisors and the EPM to re-assess plant status and re-evaluate accident mitigation priorities to utilize the available OSC repair teams effectively. Plant mitigation strategies were sound and tasks were appropriately prioritized. During the status update to TSC supervisors, the EPM explained the reasoning for each of the priorities to ensure they understood the significance of each task. The EPM then briefed the entire TSC/OSC staff on plant conditions and repair priorities. During these briefings, the EPM did not ensure that all personnel provided their full attention. However, each group was then briefed by the

specific supervisor. No adverse consequences resulted from this observation.

Operations personnel in the TSC thoroughly monitored the SCR staff's implementation of the emergency operating procedures. Operations personnel anticipated events and reviewed criteria in the EALs that could result in an escalated emergency classification. One of the operations engineers devised the strategy to cross-tie a power supply to energize the necessary equipment, the high pressure core injection pump steam supply valve, to secure the radiological release.

b.3 OSC

The OSC was staffed and activated within 35 minutes of the alert declaration. Staffing was efficient and orderly, in accordance with licensee procedures. Provisions were made to call in extra operations, health physics, electrical and mechanical personnel as needed.

Proper dose control activities were observed in the OSC. Documentation was readily available to provide information on available dose and respiratory protection qualifications. Dosimetry personnel and the radiation protection coordinator were knowledgeable of repair team member doses before being dispatched. Habitability was regularly performed throughout the exercise. Good ALARA (as low as reasonably achievable) suggestions were made by repair team members in efforts associated with their tasks, such as, pathways to get to equipment or waiting in low dose areas.

Proper coordination and dispatch of the repair teams was demonstrated throughout the exercise. Repair team status boards were effectively utilized in the OSC. Appropriate priorities were set for the teams as there was effective communication between the OSC and TSC. Pre-job briefings were complete and covered the necessary information while satisfactory debriefs were performed with returning teams regarding plant radiological and equipment status.

b.4 EOF

The EOF was staffed and activated in a timely manner. The emergency director (ED) demonstrated good command and control by conducting timely and informative briefings and coordinating the EOF staff. The EOF staff supported the ED's efforts by keeping the status boards updated, verifying plant and radiological data, and interfacing with offsite officials. EOF personnel closely followed plant conditions in anticipation of further plant degradation and emergency classification escalation. The ED and his staff closely reviewed the EALs and properly declared the site area emergency (SAE) and general emergency (GE). The associated notifications (initial and follow-up) to the offsite agencies for the SAE and GE declarations were timely. The PARs for the GE were appropriate based upon the existing simulated plant and radiological conditions and were provided to offsite officials at the EOF within 15 minutes of the GE declaration.

b.5 Dose Assessment

The dose assessment staff performed satisfactorily during the exercise. The offsite radiological supervisor (ORS) demonstrated good command and control by effectively coordinating the activities of his staff. A number of "What If" calculations were performed by the staff to bound the possible consequences of a radiological release. FMTs were promptly dispatched and appropriately moved based upon meteorological conditions. Changing in-plant radiological conditions were quickly relayed to the ED. The ORS anticipated plant degradation and had PARs prepared if needed. When the GE was declared, the ORS thoroughly reviewed the PARs with the ED to ensure adequacy. Overall, the dose assessment staff effectively demonstrated implementation of their procedures.

It was observed in the dose assessment area that there were no requests for additional radiologically-related information. For example, there were no requests for a containment air sample, a plant stack sample, or data from the offsite ring monitors. This information would be useful in confirming source terms, release rates and content, and the location of the plume, respectively. No adverse consequences resulted from the absence of this information. This observation was mentioned at the NRC exit meeting and the licensee stated that it would be taken into consideration for assessment.

b.6 Licensee Exercise Critique

The licensee did not conduct a player debrief immediately following the exercise. The debrief was conducted after the critique and NRC exit meeting, thus player input was not incorporated into the critique. Licensee controllers compiled their observations and findings and presented them at the critique on December 9, 1999. The licensee identified issues, in addition to the ones identified by the inspectors. Negative comments, in addition to positive comments, were presented. Overall, the critique was thorough and self-critical. The licensee stated its intention to assess the possibility of including player input for the critique in future exercises.

c. Overall Conclusions

Based on the results of this inspection, it was determined that the overall performance of the ERO demonstrated, with reasonable assurance, that onsite emergency plans are adequate and that the licensee is capable of implementing them. Simulated events were diagnosed accurately, emergency declarations were timely and accurate, offsite agencies were notified in a timely manner, PARs were appropriate, mitigation activities were properly coordinated, and the dose assessment staff effectively implemented their procedures.

At the critique, the licensee identified issues, in addition to those identified by the NRC. The most significant issues are under consideration for entry into the corrective action program. Overall, the critique was balanced with positive and negative findings and was appropriately self-critical.

P8 Miscellaneous EP Issues

P8.1 Scenario Preparation and Exercise Control (IP 82302)

An in-office review of the exercise objectives and scenario was conducted by the inspectors prior to the exercise. It was determined that the scenario was adequate to support the demonstration of the stated objectives and satisfactorily exercised a significant portion of the emergency response capabilities. There were no inappropriate controller actions observed during the exercise

V. Management Meetings

X1 Exit Meeting

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on December 9, 1999. The licensee acknowledged the inspectors' findings.

INSPECTION PROCEDURES USED

82301: Evaluation of Exercises for Power Reactors
82302: Review of Exercise Objectives and Scenarios for Power Reactors

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS USED

ALARA	As Low As Reasonably Achievable
EAL	Emergency Action Level
ED	Emergency Director
EOF	Emergency Operations Facility
EPM	Emergency Plant Manager
ERO	Emergency Response Organization
FMT	Field Monitoring Team
GE	General Emergency
ORS	Offsite Radiological Supervisor
OSC	Operations Support Center
PAR	Protective Action Recommendation
SAE	Site Area Emergency
SCR	Simulator Control Room
TSC	Technical Support Center