EDWARD M. KENNEDY
MASSACHUSETTS

United States Senate

WASHINGTON, DC 20510-2101

July 2, 1992

Nuclear Regulatory Commission
Office of Nuclear Reactor Safety
Washington, D.C. 20555

To whomever it may concern:

I am writing to you on behalf of one of my constituents, Alice P. Granahan. She is concerned about the safety of the Pilgrim Nuclear Power Plant in Plymouth, Massachusetts.

Please send her any available published reports concerning the safety of this plant. Ms. Granahan's address is 36 Croydon Rd. Hingham, MA 02043.

Thank you very much for your cooperation and prompt attention.

Sincerely,

Edward M. Kennedy

ENCLOSURE

JAN 31 1992

Docket No. 50-293

Boston Edison Company
ATTN: Mr. Roy A. Anderson
Senior Vice President-Nuclear
Pilgrim Nuclear Power Station
RFD #1 Rocky Hill Road
Plymouth, Massachusetts 02360

Dear Mr. Anderson:

Subject: Systematic Assessment of Licensee Performance (SALP) Final Report for Pilgrim for the Period August 16, 1990 to September 28, 1991

This letter forwards the final Pilgrim Nuclear Power Station SALP Report (Enclosure 1) for the period August 16, 1990 through September 28, 1991. The initial SALP Report was forwarded by our December 26, 1991 letter (Enclosure 2) and was discussed with you and your staff at a meeting held in Plymouth, Massachusetts on January 8, 1992 (see Enclosure 3 for attendees and Enclosure 4 for slides used by NRC at the meeting).

Based upon the discussions at that meeting and your written response dated January 28, 1992, no changes in the assessment were made. We are pleased by your commitments toward improvement through self-assessment practices and your desire to improve the performance of the nuclear organization.

In accordance with 10 CFR 2.790(a), a copy of this letter and its enclosures will be placed in the NRC Public Document Room. No reply to this letter is required.

Your cooperation is appreciated.

Sincerely,

ORIGINAL SIGNED BY
WILLIAM F. KANE

Thomas T. Martin
Regional Administrator

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Enclosures:
1. NRC Region I Systematic Assessment of Licensee Performance (SALP) Report No. 50-293/90-99
2. NRC Letter, T. Martin to G. Davis, dated December 26, 1991
3. EECo Letter, R. Anderson to T. Martin, dated January 28, 1992
4. SALP Management Meeting Attendees, dated January 8, 1992
5. NRC Presentation Slides, January 8, 1992

cc w/encls:
W. Rothert, Acting Vice President, Nuclear Operations and Station Director
E. Kraft, Plant Manager
J. Dietrich, Licensing Division Manager
V. Oheim, Regulatory Affairs Manager
E. Robinson, Nuclear Information Manager
R. Hallisey, Department of Public Health, Commonwealth of Massachusetts
R. Adams, Department of Labor and Industries, Commonwealth of Massachusetts
D. Long, Security Group Leader
The Honorable Edward M. Kennedy
The Honorable John F. Kerry
The Honorable Edward J. Markey
The Honorable Edward P. Kirby
The Honorable Peter V. Forman
B. McIntyre, Chairman, Department of Public Utilities
Chairman, Plymouth Board of Selectmen
Chairman, Duxbury Board of Selectmen
Plymouth Civil Defense Director
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Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
Commonwealth of Massachusetts SLO Designee
Institute of Nuclear Power Operations (INPO)

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bcc w/encls:
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RI:DRP	RI:DRP	RI:DRP	RI:DRP	RI:DRA	RI:RA
JMacdonald/meo	JRogge	JLinville	WTFehl	WKane	TMartin
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ENCLOSURE 1

FINAL SALP REPORT

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

FINAL SALP REPORT 50-293/90-99

BOSTON EDISON COMPANY

PILGRIM NUCLEAR POWER STATION

ASSESSMENT PERIOD:

AUGUST 16, 1990 - SEPTEMBER 28, 1991

TABLE OF CONTENTS

I. INTRODUCTION

The Systematic Assessment of Licensee Performance (SALP) program is an integrated NRC staff effort to collect available observations and data and on a periodic basis to evaluate licensee performance on the basis of this information. The SALP process is supplemental to normal regulatory processes used to ensure compliance with NRC rules and regulations. The SALP is intended to be sufficiently diagnostic to provide a rational basis for allocating NRC resources and to provide meaningful feedback to licensee management to improve the quality and safety of plant operations.

This report is the NRC assessment of licensee safety performance at Pilgrim Nuclear Power Station for the period of August 16, 1990 through September 28, 1991.

An NRC SALP Board, composed of the staff members listed below, met on November 18, 1991, to review the collection of performance observations and data, and to assess licensee performance. This assessment was conducted in accordance with the guidelines in NRC Manual Chapter 0516, "Systematic Assessment of Licensee Performance." The SALP Evaluation Criteria utilized by the Board are contained in Section IV.

Chairman:

C. Hehl, Director, Division of Reactor Projects (DRP)

Members:

W. Lanning, Deputy Director, Division of Reactor Safety (DRS)
M. Knapp, Director, Division of Radiation Safety and Safeguards (DRSS)
J. Rogge, Chief, Reactor Projects Section 3A, DRP
J. Macdonald, Senior Resident Inspector
W. Butler, Director, Project Directorate I-3, Office of Nuclear Reactor Regulation (NRR)
R. Eaton, Project Manager, PD I-3, NRR

II. SUMMARY OF RESULTS

II.A. Overview

The SALP Board assessment noted sustained improvements in the management and operation of Pilgrim Nuclear Power Station. Continued attention to detail, implementation of upgraded procedures, and effective supervisory oversight contributed to a significantly reduced rate of plant transients, unanticipated reactor scrams, safety system unavailability, and personnel related errors. Management resolution of operational events and emergent outage issues were comprehensive and reflected a safety conscious nuclear perspective. Technical competence and management strengths were most notable in plant operations, radiological controls, emergency preparedness, and security. Plant operations, which included a well controlled refueling outage, excellent operator response to plant transients, and outstanding operator training, reflected good management oversight and involvement.

Continued management attention to maintenance improvement program initiatives has established effective teamwork principles and supervisory responsibilities to facilitate performance improvements. However, several isolated instances of personnel error and procedural inadequacy were identified late in the assessment period which indicated the need for continued management attention. Additionally, several NRC and licensee observations of the degraded material condition of equipment and systems within the intake structure indicated increased licensee attention was warranted.

A cooperative atmosphere established between the licensee and offsite federal, state, and local governmental agencies has advanced the resolution of longstanding offsite emergency planning issues such that the FEMA interim finding of reasonable assurance was restored.

The Security Department continued to perform in an excellent fashion. Management commitment to sustained security performance was evidenced by continuing program and hardware upgrade initiatives.

Although the engineering and technical support function remained a strong licensee asset, the Board concluded the observed deficiencies were sufficient to cause a decrease in the performance rating. Several ineffectively dispositioned engineering activities were noted during this assessment period in the engineering and technical support area. The deficiencies were diverse and involved several engineering functions including causal analysis and safety evaluation development and revision for temporary and permanent modifications.

The SALP Board noted the establishment of sound safety controls for the refueling outage which provided increased assurance regarding the availability of decay heat removal and electrical distribution systems. During the outage planning, the licensee utilized several independent review committees and conducted a relative risk analysis to establish low risk plant conditions throughout the outage.

Notwithstanding generally improved performance, the SALP Board noted several instances in which a questioning attitude was not displayed in response to anomalous system or component operation. In these instances the observed anomalies were symptomatic of degraded equipment performance.

II.B. **Facility Performance Rating Summary**

FUNCTIONAL AREA	LAST PERIOD* RATING/TREND	THIS PERIOD** RATING/TREND
Plant Operations	2 Improving	2 Improving
Radiological Controls	1	1
Maintenance/Surveillance	2	2
Emergency Preparedness	2 Improving	1
Security	1	1
Engineering/Technical Support	1	2
Safety Assessment/Quality Verification	2	2

* July 1, 1989 to August 15, 1990
** August 16, 1990 to September 30, 1991

III. PERFORMANCE ANALYSIS

III.A. Plant Operations

The previous SALP report rated plant operations as Category 2, with an improving performance trend. The report concluded that the licensee exhibited good management oversight and involvement, responsiveness to safety concerns, and an appropriate orientation toward reactor safety. Increased attention to detail by management staff and completion of a procedure upgrade program were determined to have contributed to a significant reduction in the occurrence of unplanned reactor scrams, engineered safety features systems actuations, and the incidence of operational events involving personnel error. The initial licensed operator training program continued to provide excellent support to operations. Additionally, management of scheduled and forced outages was observed to be a licensee strength. Notwithstanding improved performance in plant operations, the report noted several instances of inadequate procedure implementation, personnel error, and inattention to detail.

During this assessment period, the licensee continued to demonstrate strong and effective management controls that ensured safe facility operations. Performance improvements noted in the previous SALP report were sustained and further enhanced. Continued improvement in attention to detail and procedural adherence coupled with improved procedures and sound nuclear watch engineer (NWE) command and control served to strengthen plant reliability as demonstrated by a low plant transient rate and few challenges to safety related systems. Licensee management exhibited sound safety perspectives during the planning and execution of the refueling outage.

Operators consistently demonstrated a comprehensive knowledge of plant systems and responded appropriately to system or component issues which involved facility license conditions or technical specification limiting conditions for operations. Operations staff response to plant transients experienced during this assessment period was noteworthy. Specifically, licensed operators effectively mitigated several component failures and system malfunctions which presented operational challenges while conducting a manual reactor scram and plant shutdown in response to the feedwater control system failure event. Additionally, operators expeditiously stabilized the plant in single loop operations and maintained complete awareness and control of plant activities during the loss of 4160 V bus A-6 event. Operator assessment of plant status and prompt initiation of a plant shutdown following the "B" recirculation pump seal package failure were also indicative of sound operational performance.

Alert operator performance was routinely observed by inspectors during day shift and backshifts. Communications were clear, crisp, and succinct with repeat-back verifications typical. Shift turnovers and pre-evolution briefings were comprehensive and effective and were a notable licensee strength. Specific examples of sound control room communications were evidenced during pre-evolution briefings and subsequent conduct of post feedwater control system failure event system testing and during the A-6 bus event troubleshooting activities. Additionally, refueling outage shift turnovers and activity briefs were consistently effective.

A clear sense of pride and ownership was evident in the control room. Observation areas were clearly delineated and respected. Operators adhered to an established dress code and a professional atmosphere was maintained. Control room distractions were neither allowed nor observed. Operators were alert to plant instrumentation and responded appropriately to annunciator alarms. Completion of control room annex modifications to accommodate the additional nuclear operations supervisor position, established to reduce on shift administrative duties of the NWE, minimized control room congestion which had been a previously noted weakness.

Plant management continued to stress to all departments the necessity for full operational support. This concept was clearly reinforced by management involvement in plant operations. Plant and senior management were attentive to operations and were involved in the oversight of plant activities as evidenced by frequent control room and plant tours. Additionally, management assumed more active roles as appropriate in response to plant events stressing the importance of deliberate and comprehensive system and plant recovery and ensured the availability of appropriate resources.

The licensee continued to aggressively support operator training. The recently completed class of seven reactor operator (RO) and three senior reactor operator (SRO) candidates marked the fifth consecutive initial license class to achieve a 100% pass rate on NRC administered license examinations. Previously noted weaknesses in the availability and staffing of licensed operators have been completely resolved. The licensee maintained a six shift rotation staffed in excess of Technical Specification requirements. Overtime was controlled within administrative limits. The licensee effectively integrated newly licensed operators into shift positions which served to provide fresh and questioning operational perspectives. Increased licensed operator resources also enabled licensee management to selectively move experienced licensed operators from shift duties into various support department positions thereby integrating operational perspectives throughout the station. The increased availability of licensed operator resources also enabled operations to significantly contribute to the control room design upgrade program, to the development and verification of a major revision to the emergency operating procedures, and to provide a licensed operator to the emergency preparedness department. These contributions and increased flexibility were a noteworthy strength.

The licensee continued to sponsor an SRO certification program for selected senior plant management during this assessment period. The certification program completed the fourth consecutive annual class. The certification program served to further improve the operational knowledge and sensitivity to operational needs of staff in other plant disciplines.

The outage management organization performed well. The organization was developed with a defense in depth concept and with the increased availability of licensed operators was strong in operational knowledge. A continuously manned outage control center was the designated processing point for all activities. This center in conjunction with the tagging and shift work coordinator functions reduced NWE administrative burden, thereby enabling him to focus shift crew attention on plant conditions. The daily status and production meetings were attended by

appropriate management and staff. The meetings were conducted at a brisk pace with clear dialogue during which issues and concerns were identified and dispositioned. The outage was conducted with a minimal number of schedule or system conflicts. Pre-established decay heat removal and electrical distribution system availabilities were maintained without exception throughout the outage. The licensee conducted an extremely well controlled post outage plant startup and power ascension program free of reactor protection system or engineered safety features systems actuations.

Notwithstanding overall continued improved performance in the plant operations area, several instances of personnel error and inattention to detail were experienced. Operations personnel typically displayed a strong questioning attitude toward apparent anomalous system and component operation or response. However, during "B" emergency diesel generator testing, operators did not question or document reactive load oscillations which were later determined to have been symptomatic of voltage regulation problems which adversely affected diesel operability. Also during plant restoration following the loss of A-6 bus event, operators appeared to have accepted tripping of the high pressure coolant injection system and reactor core isolation cooling system flow control inverters, upon start of a large electrical load, as an anticipated component response based largely on historical inverter response characteristics. Additionally, the operations section did not effectively address refuel mast interferences experienced during the refueling outage core offload of peripheral fuel bundles. These interferences contributed to the inadvertent degrappling and dropping of a peripheral fuel bundle during core reload. The licensee comprehensively critiqued each event and implemented effective corrective actions.

In summary, station management maintained a strong commitment to safe plant operations as evidenced by continuous routine oversight and immediate involvement in response to operational events and safety issues. Operational outage controls were largely effective. Licensed operator staffing levels were greatly improved allowing licensed operators to be infused into support departments. Licensed operator training programs continued to provide excellent results and support to operations. However, notwithstanding the performance improvements noted above, operators on several instances did not sufficiently question anomalous or limiting operational observations which were symptomatic of component or system degradation.

III.A.2 **Performance Rating:** Category 2, Improving

III.A.3 **Board Comments:** None.

III.B. Radiological Controls

III.B.1 Analysis

The previous SALP report rated radiological controls as Category 1. Program strengths included: management involvement at all levels of work; a stable, permanent work force; excellent continuing radiation protection technician training; and a policy change to limit the maximum worker exposure. No weaknesses were noted.

Radiation Protection, Transportation and Radwaste

Early in this assessment period, prior to the outage, the licensee combined all sections having radiation protection responsibilities (i.e., radiological controls, radwaste and chemistry, and ALARA) under one manager. Previously these groups were in separate departments. This change was made to effect better coordination between the groups. The level of management involvement during this assessment period continued to be excellent. For example, management controlled outage activities from an outage control center to ensure proper usage of radiation protection resources. This allowed effective interdepartmental coordination of work.

Radiological controls procedures were well defined. Personnel were typically knowledgeable of, and properly adhered to, established radiological controls requirements. However, several instances of personnel failure to comply with established controls were noted. For example, an inadvertent release of trash containing a small quantity of radioactive contamination to a location offsite resulted from a series of longstanding failures to adhere to several procedural requirements. In response to these instances, a comprehensive procedure for conduct of radiological operations was developed. In addition, a station-wide radiological controls awareness and processes demonstration was provided during scheduled safety awareness seminars.

The Radiation Protection Technician training program continued to be excellent. Newly hired radiation protection (RP) technicians received approximately six months of initial training. All licensee RP technicians receive frequent cyclic training and must go through an annual re-qualification process. The vendor RP technician training program was also excellent. It included an abbreviated course to associate radiological hazards with each system. However, radiation worker training was not fully effective, as suggested by the above noted instances of workers failing to follow procedures and by instances of workers failing to follow good radiological controls practices.

The level and quality of licensee staffing in the area of radiation protection remained high throughout this period, despite a high turnover of radiation protection technicians. This turnover was due in part to technicians accepting promotions within the company. Expanded outage work scope, without a corresponding increase in vendor radiation protection technicians, resulted in a reduced ratio of technician staffing to work activity. Notwithstanding this reduced staffing, the licensee radiation protection staff responded well to this challenge and adequately maintained activity oversight and control.

The staff also displayed excellent abilities when addressing technical issues. For example, when a fuel bundle was dropped during the outage, the radiation protection staff responded promptly and performed the necessary surveys and calculations which determined no adverse radiological consequences existed.

Excellent exposure reduction efforts were undertaken during the refueling outage. Extensive temporary water shielding was used inside the drywell, and closed circuit television cameras and wireless communication systems were used by management to observe and direct work without receiving unnecessary exposure. The ALARA exposure projection for the outage was very aggressive. The actual exposure exceeded the projection due in part to dose rates that were 20-30% higher than anticipated because of the effects of hydrogen water chemistry system operation during the previous operating cycle. However, the refueling outage exposure was the second lowest in the history of the site. Only the first refueling outage with a negligible source term exposure was lower.

Source term reduction efforts continued from the previous assessment period. A major reduction during the recent outage was accomplished by replacing control rod drive blades using low-cobalt materials. Also, management took action to reduce exposure received during inspections by replacing equipment and/or components with materials that require fewer inspections. For example, a section of Reactor Water Clean-up (RWCU) system piping was replaced with piping made of a material that is less susceptible to intergranular stress corrosion cracking rather than repairing the piping using weld overlays. This decision was strongly influenced by potential future exposure savings.

Other initiatives in the area of ALARA included a campaign to publicize the importance of good ALARA practices and a program to reward personnel who consistently demonstrated good ALARA practices or who made significant contributions in this area. In addition, at the end of the refueling outage, all workers received a safety refresher briefing regarding the increased radiation levels to be expected in various locations of the plant upon resumption of power operations. These initiatives further demonstrated the licensee commitment to improving performance in this area.

The licensee continued to maintain an excellent radwaste program, especially in the areas of radwaste operations, shipping, and assurance of quality. Several periodic surveillances, in lieu of a single comprehensive audit, were performed and summarized in an annual report. The periodic surveillance approach was considered to be a good initiative by providing a continuing evaluation through the annual reporting period. The licensee also conducted a Quality Control review of all radioactive materials shipments, as well as de-watering evolutions and other process control program activities. The licensee initiated an extensive low level radwaste storage reduction program. Offsite radwaste transportation was well controlled with effective quality control oversight demonstrated.

Radioactive Environmental Monitoring Program and Effluent Controls Program

During the current assessment period, the Radiological Environmental Monitoring Program (REMP) and the liquid and gaseous effluent controls program were found to be effective. The programs included excellent management controls, in-depth quality assurance audits and effective follow-up on identified deficiencies, effective quality assurance and quality control of the analytical laboratory, and an excellent meteorological monitoring program. Licensee use of the

Master Surveillance Tracking Program (MSTP) to ensure surveillances, sampling, analyses and reports were conducted in a timely fashion was a notable strength. In addition to the NRC required monitoring, the licensee effectively worked with the Commonwealth of Massachusetts in establishing additional systems which provided redundant and independent monitoring of environmental conditions.

Calibrations of the effluent and process monitors were within the established acceptance criteria. The licensee demonstrated good initiative in this area by upgrading the radiation monitoring systems. Additionally, test results for the air cleaning systems were within the Technical Specification acceptance criteria. Radioactive liquid and gaseous release permits met Technical Specification and Offsite Dose Calculation Manual requirements.

The Nuclear Quality Assurance audit findings demonstrated the technical competence of the audit team. Audit follow-up actions by the licensee were found to be excellent. Licensee performance in the REMP and effluent monitoring and control programs was excellent.

Summary

The radiological controls program continued to be strong in most areas. A management reorganization, excellent technical response to an operational event, and excellent radwaste surveillances were observed. The level and quality of staffing was high despite the turnover of radiation protection technicians. Some weaknesses were observed in efforts to obtain worker compliance with radiological controls procedures. ALARA efforts continued to be effective, particularly in the area of gaining worker acceptance of exposure reduction principles. The continuation of source term reduction efforts were noteworthy. The REMP and the effluent monitoring program were of high quality. The upgrading of the radiation monitoring systems was a good initiative. Excellent followup to audit findings was noted.

III.B.2 **Performance Rating**: Category 1

III.B.3 **Board Comments:** None.

III.C. Maintenance and Surveillance

III.C.1 Analysis

The previous SALP report rated Maintenance and Surveillance as Category 2. Maintenance was properly implemented and satisfactory results were achieved. Root cause analysis of repetitive maintenance problems and failures was not always adequate because corrective actions tended to address symptoms rather than root causes. Overall, the surveillance program was adequate

to support plant operations and although several surveillances were missed during the period, these were isolated in nature and not indicative of degradation of the overall surveillance program.

Maintenance

During this assessment period the plant continued to be maintained and tested in an effective and safety conscious manner. An NRC Maintenance Team Inspection (MTI) found the maintenance program to be good with only two weaknesses identified. Planning and supervision of maintenance activities and the procedure review process were the identified weaknesses. The licensee was aggressively pursuing resolution of these issues at the conclusion of the assessment period.

Early in the assessment period, several component failures and system malfunctions, which occurred during the feedwater control system failure event, were partially attributed to ineffective maintenance program implementation. In response to this event, the licensee assembled a Multi-Disciplined Analysis Team (MDAT) which successfully evaluated the event and determined root causes for the many equipment failures and malfunctions. Extensive coordination of engineering, plant systems, maintenance, vendor, and industry expertise resulted in a full understanding of the event and effective corrective maintenance actions. The resultant "HPCI and RCIC Betterment Programs" significantly increased reliability of these systems. As a result of the MDAT effort a Maintenance Improvement Plan (MIP) was developed.

The licensee aggressively accomplished the directives of the MIP and at the end of the assessment period all but two of the items were completed. Improvements in the work control process were effectively implemented to upgrade the planning effort to produce task ready work packages. First line supervisors were directed to provide more infield direct supervision of work activities. In addition, a training program was developed and implemented to provide training for supervisors on station procedures and development of supervisory skills. The production work force (mechanical, electrical, and instrumentation and controls) was structured into work teams which served to increase productivity, to increase worker responsibility, and to instill pride of ownership during routine repairs, preventive maintenance, and surveillances. A maintenance quality improvement plan was developed which conducted indepth post work critiques of selected work activities. Detailed feedback from the critiques was effectively conveyed to all personnel who participated in the task.

Initiatives of the MIP were generally effective at reducing personnel error. However two isolated and unrelated instances of personnel error occurred involving the use of an incorrect gauge during an inservice testing (IST) program surveillance and failure of the maintenance department to perform a required post maintenance valve stroke timing test. These two occurrences were inconsistent with the overall improvements in maintenance personnel performance noted this period.

Early in the assessment period first line supervision in the mechanical area was observed to be weak due mainly to rapid turnover of personnel. The resulting loss of plant specific experience coupled with a large workload contributed to a lack of productivity. A sampling of task ready work packages by NRC inspectors during the MTI found four of five packages not ready to be worked due to lack of sufficient preparation. Several of the licensee maintenance initiatives were directed toward this weakness. Maintenance planners and first line supervisors were specifically tasked with the responsibility of ensuring task readiness. In addition, development of detailed job descriptions and a stringent recruiting emphasis appears to have resulted in better retention and quality of the first line maintenance supervisors toward the end of the assessment period.

The licensee exhibited an excellent capability to assemble multi-disciplined teams to assess and resolve several emergent plant equipment problems with appropriate management oversight. In addition to the feedwater control system failure, responses to the A-6 bus, and the "B" diesel generator voltage regulator failure events demonstrated the licensee ability to effectively analyze and resolve emerging problems while maintaining appropriate safety perspective.

Overall outage maintenance was completed in a nigh quality manner. This resulted in improved reliability of safety-related systems. Specific examples included replacement of reactor water cleanup piping sections, salt service water spool piece replacement, and repair of reactor building and turbine building closed cooling water heat exchangers. One noted exception was the improper reinstallation of the drywell head at completion of the outage. An inadequate procedure contributed to cracking of drywell head washers which resulted in failure of the initial containment integrated leak rate test. While this single example was significant, it did not reflect a programmatic problem. The licensee procedure upgrade program continued to effectively raise the quality of procedures and the reliability of associated maintenance activities.

The maintenance and material condition of equipment and systems within the plant were well maintained at acceptable levels. However, a combination of harsh environmental effects has contributed to the accelerated degrading material condition of equipment and systems located in the intake structure. During the assessment period, several instances of badly corroded fire protection components caused subsystems to be inoperable and fire barriers to be breached. Other intake structure deficiencies related to the harsh environment included the salt service water system piping corrosion rates and the continuous travelling screen maintenance difficulties.

Surveillance

Licensee control of surveillance testing was observed to be very good during the period. Most notable was the evolution pre-briefing process which was very thorough and involved all participants. Few instances of missed surveillances were noted and these appeared to be isolated cases involving updating of the Master Surveillance Tracking System (MSTS) program. A few instances of ESF system actuations while the plant was shutdown were noted due to procedural inadequacies or personnel error. These again appeared to be isolated instances.

In summary, the licensee continued to implement programs to enhance maintenance activities as demonstrated by the success of the recently completed outage and increased reliability of key plant and safety-related equipment. The MDAT review process proved highly productive in resolving difficult maintenance challenges. Several ongoing issues such as task readiness and turnover of first line maintenance supervisors showed signs of progress, but were not yet fully resolved. Remaining maintenance improvement plan initiatives including the procedure upgrade program, had not been fully implemented at the end of this assessment period. Continued management attention to fully implement the initiatives of the MIP was evident. Maintenance and material conditions were well maintained; however, due to the effects of harsh environmental conditions, maintenance of the material condition of equipment and systems within the intake structure were not as effective. Surveillance testing was observed to be very good.

III.C.2 **Performance Rating:** Category 2

III.C.3 **Board Comments:** None.

III.D. **Emergency Preparedness**

III.D.1 **Analysis**

The previous SALP report rated emergency preparedness as Category 2, with an improving performance trend. That rating was based on a strong and effective program, management commitment, a fully qualified emergency response organization (ERO), excellent training, and continued extensive resource commitment to off-site EP. However, some off-site emergency plan issues were not resolved.

Extensive management involvement in EP effectiveness was maintained. Managers maintained their ERO qualifications, effectively controlled selection and qualification of the ERO staff, reviewed and approved emergency plan and implementing procedure changes, participated in drills, and resolved audit issues. The licensee audit of EP quality, including off-site interfaces, was thorough and critical. Also, the audit program was revised to include surveillance and drill observations throughout the year.

Continued strong management involvement in off-site EP included an extensive commitment to provide equipment and funding to support resolution of remaining off-site issues. Effective interfaces with local and State officials were maintained by permanent staff. The licensee interfaced extensively with the NRC/FEMA special task force (STF) to support STF determination of the state of off-site EP.

Technical issues were effectively resolved. Examples included: EP review of all new procedures and of changes to selected station procedures for potential adverse EP effects; use of a detailed checklist to assure that emergency plan or implementing procedure changes did not decrease program effectiveness; and implementation of a system that allowed State and local

officials to remotely operate sirens and receive feedback on siren status. The previous SALP report documented that although extensive licensee resources had been committed to support offsite emergency preparedness, FEMA had noted an incomplete status remained for some plans. Since that time, a common understanding of the longstanding unresolved offsite issues between the licensee and involved governmental bodies has established the necessary groundwork to facilitate resolution. Significant effort on behalf of all involved entities with respect to these issues was observed during this assessment period. Additionally and independently, a multidisciplinary joint NRC:FEMA EP task force conducted an extensive integrated review of the plan including unresolved issues and areas of contention, which also noted advancement of issue resolution. Ultimately, sufficient offsite planning progress was accomplished such that the FEMA interim finding of reasonable assurance was restored.

The licensee response to three Unusual Events (UE) was good. Each of these was promptly recognized and properly classified. Off-site notifications were made in each case, but were delayed for approximately seven minutes for one event. Each UE received thorough, critical self-assessment which identified root causes of problems. Management endorsed such self-assessment, and corrective actions resulted in EP improvements. For example, offsite notification training and procedure upgrades were implemented in response to the smoldering turbine building roof UE. Also, improvements were noted in training and usage of the offsite notification system.

EP staffing was ample. The EP Department was fully staffed, with minimal turnover. Three or four persons were qualified in each ERO position. Also, systematic licensee reviews identified potential ERO staff losses, which were compensated for by appropriate ERO assignments and training.

Excellent EP training was demonstrated. Several drills, using different ERO members, were conducted with good results. Also, the licensee effectively used the control room simulator to create and run drills for the first time. Areas for improvement were identified by self-assessments (drill critiques). Several walk-through drills were conducted with shift and management staff. Good performance during the walk-throughs was evident in classification and protective action recommendation decision-making. The annual exercise did not coincide with this SALP assessment period.

In summary, a very strong and effective EP program, including training and management involvement, was evident. Effective resolution of technical issues was evident. Response to Unusual Events was good. FEMA re-instituted their reasonable assurance finding as a result of notable progress toward the resolution of off-site issues. The EP Department and ERO were fully staffed and well qualified.

III.D.2 **Performance Rating:** Category 1

III.D.3 **Board Comments:** None.

III.E. Security

The previous SALP report rated security as Category 1. Program strengths included an effective and performance-oriented security program. The licensee approach to resolution of technical security issues was excellent and timely and management attention to and support for the program were clearly evident in all aspects of program implementation. The efforts that the licensee expended to maintain and upgrade the program were commendable and demonstrated the licensee continued commitment to a high quality program.

During this assessment period, the licensee continued to maintain and implement a very effective and performance-oriented program. Program upgrades were continued and plant management involvement was very evident. Licensee self-assessments and appraisals of the security program were comprehensive and performance based and correction of identified deficiencies was timely and technically correct.

Site security and plant management continued to be actively involved in security matters as evidenced by the support and funding for security upgrades and enhancements including a new security computer system and associated access control equipment, a new central alarm station and a renovated secondary alarm station, enhanced perimeter lighting, a new backup power supply, and new assessment system equipment.

Security management also maintained effective communications and excellent rapport with other plant groups, as demonstrated by participation in the daily plant maintenance meetings and representation on the plant work flow task force during the refueling outage. This enabled security to be directly involved in the work planning process, resulting in better coordination and support, and more timely resolution of any potential security problems prior to the start of work. Security operations personnel were also included in the review group for all plant design change packages in order to identify affected security systems and procedures, and to determine the need for any security compensatory actions. Security management also remained active in industry groups dealing with nuclear power plant security and maintained effective liaison with law enforcement agencies and organizations regarding matters of interest to nuclear power plant licensees. This demonstrated a high degree of program support from plant and upper level management for a performance-based security program.

The licensee plant and corporate staff continued to conduct excellent reviews and surveillances of program implementation. The annual audit of the security program was very comprehensive and thorough. The audit focused on program and personnel performance and also included a review of compliance with program procedures and regulatory requirements. Semi-annual audits of the safeguards information program, including materials issued to contractors and vendors, were also effectively conducted. Concerns or findings identified during the surveillances and audits were promptly and effectively resolved.

The training program continued to be well implemented by a fully qualified supervisor and training staff. Early in the assessment period, a potential problem with the training lesson plans was identified by the NRC. The licensee took prompt and effective corrective action that included upgrading the lesson plans from a compliance to a performance orientation. The licensee also actively supported training beyond that required by the NRC. For example, 19 licensee and contractor supervisors received firearms instructor training through the National Rifle Association, and 12 licensee and contractor supervisors participated in tactical response training for cover and concealment, deployment of forces, and stress firing. The licensee commitment to support the enhanced security training demonstrated management resolve for an effective, well-trained security force.

Staffing of the security force remained very stable during this assessment period with a very low turnover rate. Members of the security force were found to be very knowledgeable of their duties, and personnel errors were rare. A new three-year contract was approved late in the period with the security contractor.

The licensee also continued to implement an effective preventive maintenance program for the security equipment. However, the time to initiate repairs to some equipment was occasionally lengthy. When this was identified by the NRC, prompt action was taken to correct the situation by reviewing the status of security maintenance requests at the department managers Plan-of-the-Day meeting and including this status in the weekly Executive Management Information Report.

The licensee Fitness-for-Duty program and implementation were found to be responsive to the rule. Minor inconsistencies with licensee implementation of the rule identified by the NRC were promptly corrected.

Licensee event reporting procedures were clear, consistent with NRC reporting requirements and well understood by security supervisors. The licensee was also properly tracking and analyzing loggable security events and taking corrective actions as necessary.

The licensee submitted one physical security plan change during the period. The revision, which was very extensive, was technically sound and demonstrated a thorough knowledge and understanding of NRC requirements and security objectives.

In summary, the licensee demonstrated excellent security practices and a performance-oriented training program. Management attention to and support for the program were clearly evident. Staffing was very stable with knowledgeable personnel. Through effectively maintained equipment and a competent, effective management team, the licensee continued to assure the implementation of a quality program during this assessment period. Security personnel performed competently and professionally and displayed the skills and knowledge necessary to effectively implement security plan objectives.

III.E.2 **Performance Rating:** Category 1

III.E.3 **Board Comments:** None.

III.F. Engineering and Technical Support

III.F.1 Analysis

The previous SALP report rated Engineering and Technical Support as Category 1. Positive factors were noted in the following areas: highly qualified staff, root cause analysis, effective modification process, and engineering responsiveness for station activities. However, the board noted a weakness in the area of design basis reconstruction.

During this assessment period, the Nuclear Engineering Department (NED) initiated a design basis reconstruction for the High Pressure Coolant Injection System (HPCI). The HPCI design basis reconstruction is scheduled to be completed in the first quarter of 1992.

The NED modification process for major modifications was of high quality. Administrative procedures which control the modification process provided detailed instructions for control of modifications. Each Plant Design Change (PDC) was thoroughly reviewed by the NED Design Review Board (DRB) prior to being submitted to the Onsite Review Committee (ORC) for review. The DRB was instrumental in providing high quality modifications. Safety evaluations for modifications were detailed and thorough. Post modification testing and closeout were effectively controlled and complete. Plant design changes were thoroughly engineered and technically sound. The Reactor Water Cleanup system instrument line modification was an example of an excellent quality design change. However, in one instance, revision to an ongoing modification to a shutdown cooling isolation valve involving a sealant injection was implemented without effective assessment of the impact on original safety evaluation parameters.

In general, temporary modifications contained effective technical and operational reviews, approvals, and detailed safety evaluations. Management attention in this area was evident by the frequent review of the temporary modification log by station management and the small number of installed temporary modifications. However, in one instance, a complex temporary modification was installed in the HPCI system, for which the controls of the temporary modification process were inadequately implemented.

Generally, the evaluations and corrective actions initiated by the Nuclear Engineering Department to address station deficiencies were thorough and timely. Examples of effective NED response to station deficiencies included the evaluation of spurious reactor vessel level spikes, response to the loss of the A-6 bus and EDG lockout, and failure analysis for the feedwater check valve leakage. However, in one instance, an NRC Electrical Distribution System Functional Inspection (EDSFI) identified that NED failed to effectively perform root cause analysis such that corrective actions to prevent recurrence of HPCI/RCIC inverter trips were ineffective. Lack of evaluation of all postulated voltage transients resulting from starting of large AC motors and problems with the response characteristics of the battery chargers were noted weaknesses. The licensee HPCI and RCIC operability evaluation was not complete at the conclusion of this assessment period.

The NED support for the refueling outage was observed to be particularly effective. The permanent NED staff onsite was recently increased from two to five engineers. The site engineering office was staffed 24 hours per day during the refueling outage. The NED engineers, who work in the corporate engineering office, were routinely assigned to the site to supplement the site engineering staff. The design section manager and other NED personnel routinely attended the morning outage meeting at the site. In addition, the morning site planning meetings were transmitted live via an audio/visual link to the Braintree engineering office. At the offices in Braintree, an outage center was staffed to provide effective support to the plant. This outage support to the site was observed to be well organized and responsive. For example, NED provided continuous support to the Salt Service Water System (SSW) pipe inspections. Recommendations to station management for SSW corrective actions reflected a positive safety perspective.

The NED organization consisted of approximately 85 engineers with average facility engineering experience of 9.4 years. More than half the staff possessed advanced degrees and nearly half were registered professional engineers. The NED assigned three full-time engineers to maintenance for assistance in front end planning, design engineering, and procurement of materials. Observation of interaction between maintenance and engineering personnel, during the Maintenance Team Inspection, indicated a well established working relationship between maintenance department and engineering. The on-site system engineers and NED engineers provided effective engineering support to the maintenance department.

The NED Individual Plant Examination (IPE) team performed a limited scope engineering risk assessment for the current refueling outage. This assessment identified relative risks for fuel uncovering and steaming during specific windows of the refueling outage. Based on the conclusion of this study, schedule changes were made to further minimize the risk during shutdown. For example, the startup transformer repair was scheduled earlier in the outage to maximize the available redundant power sources.

The backlog of open engineering service requests (ESR) has steadily decreased over the past two years. The open ESRs in 1989 were nearly 1000 while in May of 1991 this number had been reduced to approximately 270. This reduction in part was due to a recently instituted change to screening and prioritization. This change required the ESRs to be prioritized on the basis of safety significance. For example, a recent plant design change to install an RHR valve interlock, preventing draining of the reactor vessel during shutdown cooling, was authorized for early completion due to its safety significance. The significant reduction of the ESR backlog and the prioritization on the basis of safety significance were viewed as positive NED initiatives.

A significant effort was completed to improve the inservice test (IST) program. This effort was to improve IST procedures, to establish reference stroke times for valves, and to complete the implementation of the program. The IST staff was effective in implementing program requirements.

Several issues were identified during the EDSFI in which engineering technical reviews done earlier in the life of the facility were weak. Examples include inadequate calculations or supporting documentation to determine the adequacy of the heating, ventilation, and air conditioning (HVAC) for switchgear and battery rooms, lack of adequate supporting documentation or analysis to establish containment electrical penetration protection, calculation errors in the short circuit and voltage drop studies and diesel fuel consumption calculations. Other concerns identified by the EDSFI included: the effect of large motor starting on Class 1E buses; the adequacy of the rating of Class 1E load center transformers due to the installation of non-safety-related fans; and the lack of adequate calculations or studies to determine the interrupting rating of breakers and basic insulation level rating of switchgear. Both short and long term corrective actions were appropriate. The above concerns illustrated the need to continue to develop the design basis.

The licensee self-assessment programs were effective and included semiannual internal reviews, outage critiques, engineering and technical support functional analyses, and QA audits. The licensee comprehensive self-assessment program, which included an objective outage critique, provided meaningful management information on NED effectiveness.

Overall, the engineering and technical support organization continued to provide high quality engineering and technical support to the station. Initiatives in the areas of reductions of open ESRs and shutdown risk assessment indicated a commitment to improved performance and plant safety. Improvement in the inservice test program was noted. NED involvement and support of the station activities, such as the refueling outage, continued to be organizational strengths. The engineering staff was highly qualified and worked effectively with maintenance personnel. However, a number of areas requiring improvement in engineering technical reviews and design basis reconstruction were identified during the EDSFI. In addition an isolated, but significant, deficiency involving root cause analysis was identified.

III.F.2 **Performance Rating:** Category 2

III.F.3 **Board Comments:**

Notwithstanding generally strong engineering and technical support performance, the Board noted that several emergent engineering challenges experienced this assessment period were not effectively dispositioned. These challenges were sufficiently diverse that the Board concluded a decrease in performance rating was warranted.

III.G. Safety Assessment and Quality Verification

III.G.1 Analysis

The previous SALP report rated safety assessment and quality verification as Category 2. It was noted that licensee performance in licensing and support of plant operations continued to be excellent. Strong management involvement remained evident throughout the organization. Additionally, involvement of the onsite review committee in plant issues was observed to be increasing.

Routine licensing activities were conducted in a timely fashion during this assessment period. The licensee developed well stated, comprehensive, and technically accurate submittals which facilitated effective NRC staff review and response. The licensee expeditiously responded to the few instances in which the staff requested additional information in order to complete reviews. Relief and exemption requests were similarly timely and comprehensive. The one temporary waiver of compliance request which was submitted this assessment period was well supported by plant design bases and risk analysis. Overall, the licensing function continued to be a licensee strength.

The licensee made significant progress with respect to implementation of the detailed control room design review modifications which had been identified in previous SALP reports as a longstanding open TMI item. Appropriate management attention and commitment of resources have maintained the program on projected schedules.

The licensee continued to demonstrate improved ability to internally critique program performance. As a positive initiative, the licensee conducted one self-assessment review of each plant discipline during this SALP period. The assessments were comprehensive and objective with areas for improvement identified and effectively addressed. The results of the assessment were presented to the NRC. Previous licensee initiatives such as the Senior Management Watch Program were maintained and continued to provide positive results. Implementation of improvements and corrective actions such as the trash compaction facility upgrade has been effective.

Quality Assurance Department (QAD) audit and surveillance programs were effectively implemented. The programs were performance based, and issued reports and findings demonstrated sound technical and regulatory bases. The depth of QAD technical knowledge was enhanced by active participation in technical expert exchange programs with other member utilities. Station respect for the quality assurance function was evident in typically timely responses to findings as well as requests for special QAD oversight of activities in response to identified weaknesses. Specifically in response to station management requests, QAD provided extensive reviews of radwaste, the trash compaction facility, and transportation operations following identification of several deficiencies within these areas.

The licensee regulatory compliance processes were effective. Licensee Event Reports continued to be of excellent development and content. A conservative reporting perspective was evident. Additionally, the licensee displayed sound safety perspectives in the reporting of generic issues of potential safety significance. The formation of a problem assessment committee, which convened daily and was chaired by a currently licensed senior reactor operator, effectively reviewed administrative problem identification mechanisms to ensure immediate operability and reportability considerations were addressed in a timely fashion. This was a previous NRC concern.

Station management demonstrated excellent safety perspectives in the planning and conduct of the refueling outage. The schedule was developed consistent with a system window approach which established and ensured maximum fluid and electrical system availabilities. An outage organization was developed which incorporated a defense in depth concept using various independent review committees. Additionally, the schedule safety controls were verified by a relative risk analysis. Emergent outage issues were effectively managed as well. Appropriate management involvement ensured sound issue resolution. This was particularly evident in the scope and selected materials utilized in the reactor water cleanup, steam extraction, and salt service water system spool piece and pipe replacements.

The licensee displayed excellent causal analysis of operational transients during the assessment period. Multidisciplinary analysis teams (MDAT) established following the loss of feedwater control and loss of the A-6 bus events provided effective management support and necessary resources. The HPCI and RCIC betterment programs were notable achievements of the MDAT process. However, operational anomalies of apparent minor significance were noted that did not reach a threshold of increased management attention, which were not effectively resolved on initial attempt and which ultimately affected system operability. Specifically, reactive load oscillations on the "B" emergency diesel generator (EDG) were not resolved until the condition caused the EDG to become inoperable. A spent fuel bundle became inadvertently degrappled and dropped in part due to the lack of resolution to the interferences experienced when manipulating peripheral core bundles. Additionally, inadequate causal analysis of HPCI and RCIC inverter tripping and subsequent weak control of post modification testing were the subject of ongoing concern at the conclusion of the assessment period. With respect to plant material condition, the licensee has not been effective in maintaining the intake structure equipment and systems in a manner consistent with the remainder of the station. Also, although identified as a Long Term Plan item, the intake structure upgrade elements have not been completely developed.

The offsite review committee (NSRAC) was a diverse body which convened on a bi-monthly bases. The NSRAC extensively utilized standing subcommittees and provided effective oversight of plant operations and licensing issues. The onsite Operations Review Committee (ORC) continued to effectively support plant operations. The ORC composition included strong technical expertise and the committee convened well in excess of required frequencies. The quorum typically provided detailed review and deliberation of issues when called upon. Subcommittees were utilized to enhance the ORC function. The previous SALP noted that ORC expertise had not been fully utilized by licensee management. During the current assessment period the ORC was utilized on a more frequent basis. However, ORC review was not enlisted by licensee management following testing and modification of battery charger and HPCI and RCIC inverter performance at the conclusion of the refueling outage. This was a significant departure from otherwise effective utilization of the ORC during the assessment period.

In summary, the licensee continued to display effective assurance of quality of plant operations through improving self assessment capabilities. Excellent refueling outage safety system and administrative controls evidenced sound station safety perspectives. The ability to comprehensively analyze operational events and to implement effective corrective actions was usually demonstrated. Notwithstanding a generally aggressive safety perspective during the assessment period, resolution of several recurrent operational anomalies was ineffective such that operability of systems was ultimately impacted. In one such instance the ORC function to review modification and subsequent testing was not enlisted.

III.G.2 **Performance Rating:** Category 2

III.G.3 **Board Comments:**

Several operational anomalies were noted which were not aggressively questioned and pursued. Although a long term plan item exists, slow progress toward sustained improvement in the material condition of equipment and systems located within the intake structure has been realized and additional attention is warranted.

IV. SALP CRITERIA

Licensee performance is assessed in selected functional areas, depending on whether the facility is in a construction or operational phase. Functional areas normally represent areas significant to nuclear safety and the environment. Some functional areas may not be assessed because of little or no licensee activities or lack of meaningful observations in that area. Special areas may be added to highlight significant observations.

The following evaluation criteria were used, as applicable, to assess each functional area:

1. Assurance of quality, including management involvement and control.

2. Approach to the identification and resolution of technical issues from a safety standpoint.

3. Enforcement history.

4. Operational and construction events (including response to, analysis of, reporting of, and corrective actions for).

5. Staffing (including management).

6. Effectiveness of training and qualification programs.

The performance categories used when rating licensee performance are defined as follows:

Category 1. Licensee management attention to and involvement in nuclear safety or safeguards activities resulted in a superior level of performance. NRC will consider reduced levels of inspection effort.

Category 2. Licensee management attention to and involvement in nuclear safety or safeguards activities resulted in a good level of performance. NRC will consider maintaining normal levels of inspection effort.

Category 3. Licensee management attention to and involvement in nuclear safety or safeguards activities resulted in an acceptable level of performance; however, because of the NRC's concern that a decrease in performance may approach or reach an unacceptable level, NRC will consider increased levels of inspection effort.

Category N. Insufficient information exists to support an assessment of licensee performance. These cases would include instances in which a rating could not be developed because of insufficient licensee activity or insufficient NRC inspection.

The SALP Board may assess a performance trend, if appropriate. The trends are:

Improving: Licensee performance was determined to be improving during the assessment period.

Declining: Licensee performance was determined to be declining during the assessment period and the licensee had not taken meaningful steps to address this pattern.

Trends are normally assigned when one is definitely discernable and a continuation of the trend may result in a change in performance during the next assessment period.

ENCLOSURE 2

NRC LETTER

T. MARTIN TO G. DAVIS

DATED DECEMBER 26, 1991

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

DEC 26 1991

Docket No. 50-293

Boston Edison Company
ATTN: Mr. George W. Davis
Senior Vice President - Nuclear
Pilgrim Nuclear Power Station
RFD #1 Rocky Hill Road
Plymouth, Massachusetts 02360

Dear Mr. Davis:

Subject: Systematic Assessment of Licensee Performance (SALP) Initial Report for Pilgrim for the Period August 16, 1990 to September 28, 1991

An NRC SALP Board conducted a review on November 18, 1991, and evaluated the performance of activities associated with Pilgrim Nuclear Power Station. The results of this assessment are documented in the enclosed SALP report, which covers the period August 16, 1990 to September 28, 1991. We plan to meet with you on January 8, 1992. At the meeting, please be prepared to discuss our assessment as well as any perspectives you may wish to add.

Briefly, the assessment found the plant to have been operated and supported in a manner that reflected a safety conscious nuclear perspective. The assessment determined that a superior level of performance was achieved in the areas of Radiological Controls, Emergency Preparedness, and Security. A good level of performance was attained in the other areas assessed. However, the decline in performance from the previous assessment period in the Engineering and Technical Support area was disappointing.

Your written comments, if any, are requested within 20 days following our meeting. The enclosed report, your response, and a summary of our findings and planned actions will be placed in the Public Document Room.

Your cooperation is appreciated.

Sincerely,

Thomas T. Martin
Regional Administrator

Enclosure: NRC SALP Report 50-293 90-93

9201020022

ENCLOSURE 3

BECo LETTER

R. ANDERSON TO T. MARTIN

DATED JANUARY 28, 1992

BOSTON EDISON
Pilgrim Nuclear Power Station
Rocky Hill Road
Plymouth, Massachusetts 02360

Roy A. Anderson
Senior Vice President — Nuclear

January 28, 1992
BECo Ltr. 92-007

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

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

SUBJECT: Response to Systematic Assessment of Licensee Performance Board Report No. 50-293/90-99

Dear Sir:

This letter documents Boston Edison Company's receipt and review of the Systematic Assessment of Licensee Performance (SALP) Board Report for Pilgrim Nuclear Power Station (PNPS) covering the period August 16, 1990 through September 28, 1991.

In general, the report provides an assessment of Pilgrim that is consistent with our internal assessments. We will integrate your comments for each of the SALP functional areas into our long term improvements.

We will continue to raise the standards of the Nuclear Organization. Our self-assessment practices have made a major contribution to this result and will contribute to further improvement. Our commitment to improve has the support of the highest levels of the company and extends throughout the Nuclear Organization.

R. A. Anderson

RLC/dmc/5045

cc: Mr. Thomas T. Martin
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Rd.
King of Prussia, PA 19406

9202040123

ENCLOSURE 4

SALP MANAGEMENT MEETING ATTENDEES

JANUARY 8, 1992

ENCLOSURE 4

SALP MANAGEMENT MEETING ATTENDEES

JANUARY 8, 1992

1. Boston Edison Company (BECo)

G. Davis, Executive Vice President
R. Anderson, Senior Vice President, Nuclear
E. Wagner, Vice President, Nuclear Engineering
W. Rothert, Acting Station Director
E. Kraft, Plant Manager
D. Lo[illegible], Manager, Plant Support Department
R. Fairbank, Manager, Nuclear Engineering Department
R. Varley, Manager, Emergency Preparedness Department
H. Oheim, Manager, Regulatory Affairs
L. Schmeling, Manager, Nuclear Services Department
L. Olivier, Manager, Operations Section
D. Eng, Manager, Planning and Outage Department
L. Wetherell, Acting Manager, Radiological Section
C. Goddard, Manager, Radwaste and Chemistry Section
F. Famulari, Manager, Quality Assurance Department
J. Fulton, Legal Department
R. Grammont, Manager, Maintenance Section
J. Bellefeuille, Manager, Technical Section
N. Desmond, Manager, Compliance Division
J. Neal, Manager, Security Section
A. Flanagan, Nuclear Information Office
D. Tarantino, Nuclear Information Office

2. U.S. Nuclear Regulatory Commission (NRC)

C. Hehl, Director, Division of Reactor Projects
J. Linville, Chief, Projects Branch No. 3
J. Rogge, Chief, Reactor Projects Section 3A
A. Cerne, Resident Inspector
D. Kern, Resident Inspector
R. Eaton, Project Manager, Office of Nuclear Reactor Regulation
R. Lorson, Reactor Engineer

3. Commonwealth of Massachusetts

J. Muckerheid, Nuclear Engineer

4. Press and Public

E. Copp, WATD News
M. Ott
J. Barrows
M. Lampert
J. Fleming

NRC PRESENTATION SLIDES

JANUARY 8, 1992

INITIAL SALP REPORT

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

SALP REPORT 50-293/90-99

BOSTON EDISON COMPANY

PILGRIM NUCLEAR POWER STATION

ASSESSMENT PERIOD: AUGUST 16, 1990 - SEPTEMBER 28, 1991

BOARD MEETING: NOVEMBER 18, 1991

Pilgrim Slide 1

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AGENDA

SALP Management Meeting
JANUARY 8, 1992
10:00 AM

NRC INTRODUCTORY REMARKS:
C. W. Hehl, Director,
Division of Reactor Projects

PILGRIM INTRODUCTORY REMARKS:
G. W. Davis, Executive Vice President,
R. A. Anderson, Senior Vice President,
Nuclear

NRC SALP PROCESS:
J. C. Linville, Chief,
Projects Branch 3

NRC SALP REPORT PRESENTATION:
J. F. Rogge, Chief,
Projects Section 3A

(PILGRIM TO COMMENT AFTER EACH AREA)

PILGRIM CLOSING REMARKS: R. A. Anderson
Senior Vice President, Nuclear

NRC CLOSING REMARKS: C. W. Hehl

SALP PROGRAM OBJECTIVES

1. IDENTIFY TRENDS IN LICENSEE PERFORMANCE.

2. PROVIDE A BASIS FOR ALLOCATION OF NRC RESOURCES.

3. IMPROVE NRC REGULATORY PROGRAM.

Performance Category Ratings

Category 1 Superior performance; consider reduced inspection.

Category 2 Good performance; consider normal inspection.

Category 3 Acceptable performance; consider increased inspection.

Improving: Performance improving during assessment period.

Declining: Performance declining during assessment period and the licensee had not taken meaningful steps to address this pattern.

Evaluation Criteria

1. Assurance of quality, including management involvement and control.

2. Approach to the resolution of technical issues from a safety standpoint.

3. Enforcement history.

4. Operational events (including response to, analyses of, reporting of, and corrective actions for).

5. Staffing (including management).

6. Effectiveness of training and qualification programs.

PERFORMANCE ANALYSIS AREAS FOR OPERATING REACTORS

A. PLANT OPERATIONS

B. RADIOLOGICAL CONTROLS

C. MAINTENANCE/SURVEILLANCE

D. EMERGENCY PREPAREDNESS

E. SECURITY

F. ENGINEERING/TECHNICAL SUPPORT

G. SAFETY ASSESSMENT/QUALITY VERIFICATION

SALP Board

Board Chairman

C. Hehl, Director, Division of Reactor Projects (DRP)

Board Members

W. Lanning, Deputy Director, Division of Reactor Safety

M. Knapp, Director, Division of Radiation Safety and Safeguards

J. Rogge, Chief, Reactor Projects Section 3A, DRP

J. Macdonald, Senior Resident Inspector

W. Butler, Director, Project Directorate I-3, NRR

R. Eaton, Project Manager, PD I-3, NRR

Plant Operations

- Management oversight
- Management involvement
- Outage controls
- Operator staffing
- Operator training
- Component/system degradation

Performance Rating: Category 2 Improving

Radiological Controls

Radiological Controls programs

- Management reorganization
- Technical response
- Radwaste surveillances
- Staffing
- Worker compliance
- ALARA
- Source term reduction
- Radiological environmental monitoring program
- Radiological effluent monitoring program
- Radiation monitoring systems
- Audit.

Performance Rating: Category 1

Pilgrim Slide 9

Maintenance and Surveillance

- Maintenance programs
- Outage
- Safety-related equipment
- Multi-Discipline Analysis Team
- Task readiness
- First line maintenance supervisors
- Maintenance improvement plan
- Maintenance and material conditions
- Intake structure
- Surveillance

Performance Rating: Category 2

Emergency Preparedness

- Emergency preparedness program
- Training
- Management involvement
- Technical issues
- Response to Unusual Events
- FEMA reasonable assurance
- Staffing

Performance Rating: Category 1

SECURITY

- SECURITY PRACTICES
- TRAINING
- MANAGEMENT ATTENTION
- STAFFING
- EQUIPMENT
- MANAGEMENT TEAM
- QUALITY PROGRAM
- SECURITY PLAN OBJECTIVES

PERFORMANCE RATING: CATEGORY 1

Engineering and Technical Support

- Engineering support
- Engineering Service Requests
- shutdown risk assessment
- inservice test program
- Nuclear Engineering Department involvement
- Staffing
- Engineering technical reviews
- Design basis reconstruction
- Root cause

Performance Rating: Category 2

Safety Assessment and Quality Verification

- Assurance of quality
- Outage safety system controls
- Administrative controls
- Operational events
- Corrective actions
- Operational anomalies
- Onsite Review Committee

Performance Rating: Category 2

DATED: July 27, 1992 GREEN TICKET NO. 7915

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