



Boston Edison

Pilgrim Nuclear Power Station
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August 31, 1995

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LONG TERM PROGRAM - SEMI-ANNUAL REPORT

This letter provides the semi-annual Long Term Program (LTP) update in accordance with Section V.A of the "Plan for the Long Term Program - Pilgrim Nuclear Power Station". Attachment 1 includes schedules for the A and B regulatory items. Attachment 2 includes commitment descriptions, progress since the last update, and summaries of changes if applicable.

In addition to Schedule A and B items, we are implementing plant betterment modifications and activities. These additional items, identified in Schedule C, are included in Attachment 3. Schedule C items are outside the regulatory scope of the Long Term Program and are exempt from the license conditions imposed on Schedule A and B items.

Changes in status since our last submittal are marked by revision bars in the right margins of Attachment 2.

Completed Items

- Physical Security Improvements
- Root Cause of Weld Failures
- Control Room Design Review
- LP Turbine Rotor Replacement
- RWCU Piping Replacement

Schedule Revisions

- Neutron Flux Monitoring
- IGSCC of the Core Shroud

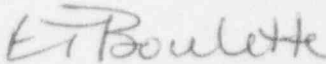
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New Items

- Severe Accident Management Program
- South Weymouth Naval Air Station

If you have any questions on the contents of this report, please direct these to Mr. Alan Shiever, our Regulatory Affairs Division Manager, at (508)830-7948.


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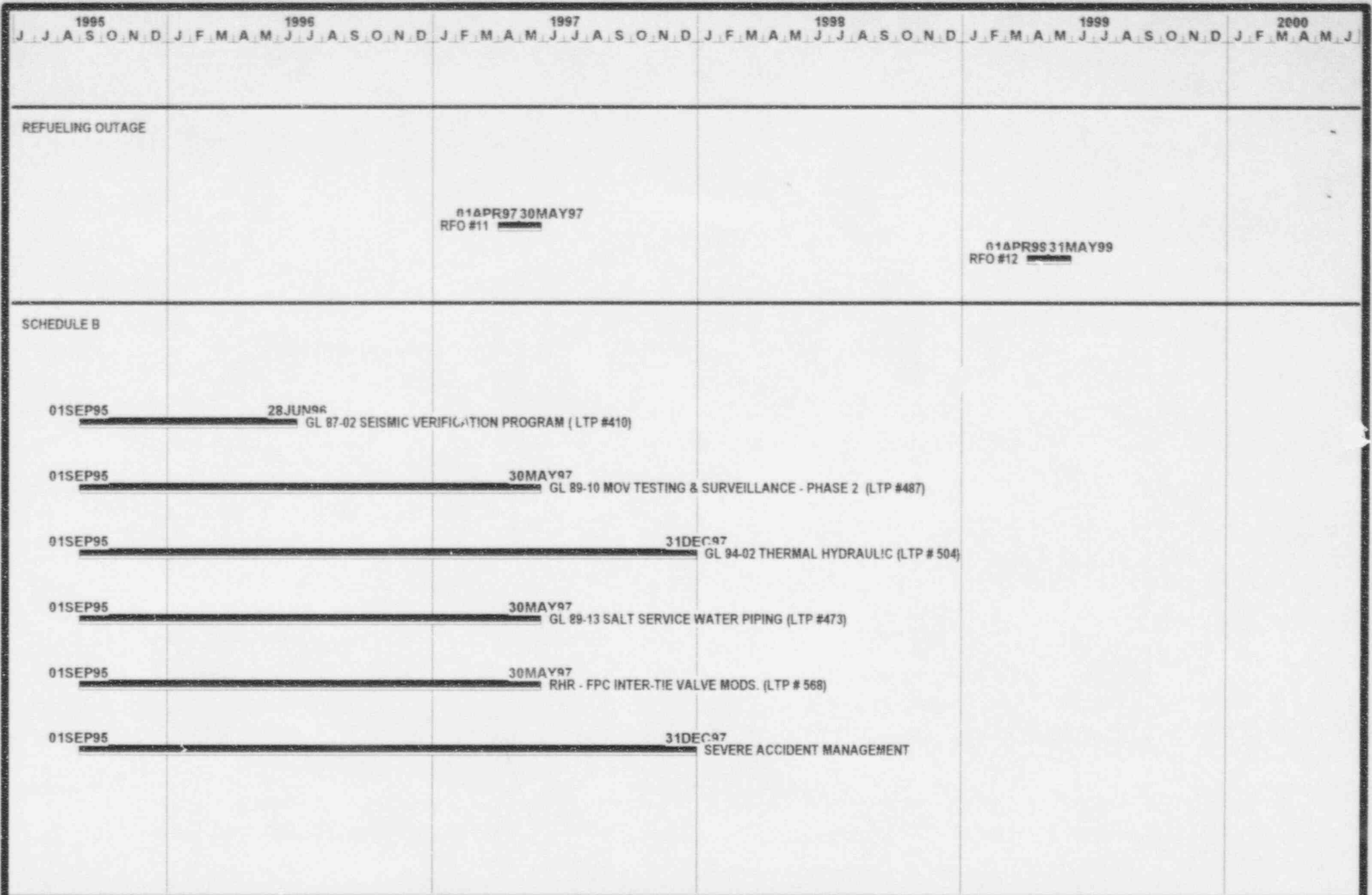
Attachments

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LONG TERM PROGRAM

BOSTON EDISON - NUCLEAR ORGANIZATION

ATTACHMENT 2

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ATTACHMENT 2
SCHEDULE A

MAINTENANCE RULE (LTP #584)

Commitment Description

10CFR50.65 "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants " was issued as a final rule on July 10, 1991 (Reference 1). Licensees are required to have in place by July 10, 1996, a program capable of monitoring the overall continuing effectiveness of their maintenance programs to ensure that safety related and certain non-safety related structures, systems, and components are capable of performing their intended functions; failures of non-safety related equipment will not occur which could prevent the fulfillment of safety related functions; and failures resulting in scrams and unnecessary actuations of safety related systems are minimized.

The rule has a five year implementation schedule with supporting regulatory guide development and promulgation expected within the first two years. This schedule allows three years for licensee development beyond the time that final guidance is expected to be available.

References

1. Federal Register Vol. 56 No. 132, dated July 10, 1991

Commitment History/Progress

Progress and Summary of Changes - March 1991 to August 1991

- A program for ensuring compliance with the maintenance rule is being developed and will be provided in the next regular report for the LTP.

Progress and Summary of Changes - August 1991 to February 1992

- Our implementation approach for the maintenance rule consists of two major aspects:
- A program to monitor the performance of specified structures, systems and components (SSCs) against established goals, and
- Use of the reliability centered maintenance (RCM) concept to upgrade the Station's Preventive maintenance program.
- Development of our monitoring program is evolving in concert with the guidance documents being established by NUMARC and the NRC. The NUMARC guidance is being established to address four areas: selection of SSCs to be covered by the rule; goal setting and performance monitoring; demonstrating equipment functionality by inherent SSC characteristics or by appropriate preventive maintenance; and the removal of plant systems from service without affecting overall plant safety. We understand the NRC guidance will describe acceptable methods for Licensees to monitor the overall continuing effectiveness of their maintenance activities, while offering flexibilities in establishing goal setting, monitoring, and preventive maintenance activities.
- The RCM program commenced in January 1992 with the formal establishment of an RCM team. The EPRI "Work Station" RCM software was selected for use in RCM system analysis. RCM team training on this software and RCM methodology was completed in January 1992.

ATTACHMENT 2 (Continued)

SCHEDULE A

- The RCM program scope identifies and prioritizes 47 plant systems, each requiring approximately 16 weeks of work. A number of systems will be worked in parallel. Completion of the identified program scope is scheduled for May 1994.

Progress and Summary of Changes - March 1992 to August 15, 1992

- PNPS is continuing with a preventive maintenance program upgrade utilizing RCM methodology. An additional system has been added to the RCM program scope bringing the total number of systems to 48. The analysis of three systems has been completed. The identification of SSCs within the scope of the maintenance rule is underway and scheduled for completion in 1992.

Progress and Summary of Changes - August 15, 1992 - February 15, 1993

- The overall project continues on schedule. The RCM analysis of fourteen systems has been completed. The preliminary list of SSCs within the scope of the maintenance rule has been developed and issued for comment. A tailored collaboration with EPRI has been established and is in progress to develop a "Living PM Program" to assist in the programmatic aspects of the maintenance rule implementation plan.

Progress and Summary of Changes - February 15, 1993 - July 31, 1993

- The project is on schedule. A total of 23 system RCM analyses are complete. The Maintenance Rule Project plan is written, an implementation procedure is written, and three pilot systems have been completed.

Progress and Summary of Changes - August 1, 1993 - January 31, 1994

- This project is on schedule. A total of 36 system RCM analyses are complete. We have started the production mode of operation with 4 Maintenance Rule systems complete.

Progress and Summary of Changes - February 1, 1994 - July 31, 1994

- A total of 40 RCM system analyses are complete. There are 12 Maintenance Rule System Evaluations Complete.
- Pilgrim has been accepted by the NRC as a volunteer pilot rule inspection plant. The pilot inspection is scheduled for the week of December 9, 1994.

Progress and Summary of Changes - July 31, 1994 - January 31, 1995

- RCM
The RCM system analysis has been completed. There have been 47 analysis completed. PM package planning for RCM recommendations is ongoing.
- Maintenance Rule
Thirteen Maintenance Rule System Evaluations were completed before the December 94 NRC Pilot Inspection. As a result of the Pilot Inspection these 13 evaluations are being reformatted. Two additional evaluations have been completed. Procedure changes and generation of new procedures to support the ongoing aspect of the Maintenance Rule are being pursued.

ATTACHMENT 2 (Continued)

SCHEDULE A

Progress and Summary of Changes - February 1, 1995 - July 31, 1995

The Maintenance Rule project is in the production phase. We have completed 21 systems and we are completing approximately two systems a week. Currently we are on schedule.

ATTACHMENT 2 (Continued)

SCHEDULE A

**PROTECTION AGAINST MALEVOLENT USE OF VEHICLES -10CFR PART 73.55(C)-
(LTP#681)**

Commitment Description

On August 1, 1994, (59 FR 38889), the NRC promulgated a new rule, 10 CFR Part 73.55(c)(7), that requires nuclear power plants have measures to protect against the use of a land vehicle as a means to gain unauthorized proximity to vital areas and to protect against a vehicle bomb.

By February 28, 1995 licensees must submit a letter that provides a summary description of their planned vehicle control measures and the results of the vehicle bomb analysis. The rule requires completion of modifications, if required, by February 28, 1996

References

- 1.) NRC letter dated 7/19/94.
- 2.) Final Rule-10 CFR Part 73.55(c)(7), 59 FR 38889, dated 8/1/94
- 3.) BECo letter 95.018, dated 02/10/95.

Commitment History/Progress

Progress and Summary of Changes - July 31, 1994 to January 31, 1995

Reference 3 provides our plans for rule compliance. Due to its safeguards classification, no summary description is provided in this LTP update. Our planned completion date for rule implementation and completion of modifications is February 28, 1996.

Progress and Summary of Changes - February 1, 1995 - July 31, 1995

Design complete, bid package assembled, anticipate start of construction in September 1995.

SCHEDULE B

PHYSICAL SECURITY IMPROVEMENTS (LTP #029)

Commitment Description

In response to NRC inspection findings, and as a plant betterment activity, BECo committed to replace the security computer and improve certain security activities. This includes miscellaneous perimeter improvements (completed in December 1989), installation of new security computer facilities, a new security computer and access control system, and a backup power supply.

References

- 1) NRC Letter 85-119, dated April 30, 1985 (RER Report)
- 2) I&E Inspection Report 86-08 dated 5/29/86

Commitment History/Progress

Progress and Summary of Changes - March 1989 to February 1990

- A. Misc. perimeter improvements - Complete
- B. Facilities change to house new computer - On Schedule for completion by December 31, 1990.
- C. Backup power supply changes - Schedule revised
- D. Develop & install new computer & access control equipment - On Schedule for completion by December 31, 1991.

The schedule for backup power supply completion was revised from December 1990 to June 1991. This change was made to properly reflect the actual integration of this activity with respect to the remaining security improvement activities.

Progress and Summary of Changes - February 1990 to November 1990

Facilities change to house new computer - Schedule revised from December 31, 1990 to December 31, 1991.

Backup power supply changes - Schedule revised from June 1991 to December 31, 1991.

Develop & install new computer and access control equipment - On schedule for completion by December 31, 1991.

System cutover of alarms and access control will be in full operation by June 30, 1992.

These changes in schedule are the result of unanticipated delays encountered during construction such as the procurement of materials to relocate existing fire water lines, removal of asbestos during building demolition, and contaminated material handling.

SCHEDULE B

Progress and Summary of Changes - December 1990 to February 1991

Based on improvements undertaken to address NRC evaluations of our security perimeter conducted in 1990, and recent events in the Persian Gulf, we have re-focused our efforts involving physical security improvements to include additional work activities aimed at strengthening perimeter security. These additional activities will be completed in 1991 and include:

Upgrading the E-Field to a Series 5000

Installing a new Video Capture System

Enhancing site lighting

The integration of these activities with the present LTP activities necessitate changes to the projected completion dates. Progress summary and schedule changes are as follows:

Construction has begun on a new facility to house the new security system computer. Renovations to the bottom floor of the Main Gate House have also begun. This is part of the revised security facilities scope. This work will continue through 1992; thus, the completion date is changed from December 31, 1991 to December 31, 1992.

A new backup power supply (diesel generator) has been ordered, and expected delivery is March 1991. Final completion of installation is revised to December 31, 1992 to coincide with the computer facilities upgrade schedule.

Performance acceptance testing of the new security computer system at the manufacturer's facilities has identified system problems that have delayed delivery. Delivery is anticipated within the next several months; therefore, staging and commencement of training and security operating procedure revisions are planned for 1991. The final completion date for the computer and access control equipment is changed to December 31, 1992.

The system cutover of alarms and access control operational completion date is similarly revised to December 31, 1992 to accommodate the above schedule revisions.

Progress and Summary of Changes - March 1991 to August 1991

Construction of a new facility to house the new security system computer is on schedule for completion by December 31, 1992.

The new backup power supply (diesel generator) was received on July 19, 1991. Installation is on schedule for completion by December 31, 1992.

Delivery of the new security computer system has been delayed and is not anticipated until early 1992. The final completion date of the computer and access control equipment is on schedule for December 31, 1992.

System cutover of alarms and access control operational is on schedule for completion by December 31, 1992.

We are shifting the implementation schedule from 1991 to 1992 for upgrading the E-Field to a Series 5000. This revision is based on resource re-allocations for 1991 necessitated by work scope increases on other non-security tasks during RFO #8. The installation of a new Video Capture System and enhancement of site lighting remain on schedule for completion during 1991.

ATTACHMENT 2 (Continued)

SCHEDULE B

Progress and Summary of Changes - August 1991 to February 1992

Construction of a new facility to house the new security system computer is on schedule for completion by December 31, 1992.

Installation of the new backup power supply (diesel generator) is on schedule for completion by December 31, 1992.

The security computer manufacturer has been unable to meet all of the contractual obligations to deliver the specified system on schedule. We are currently evaluating new manufacturers to complete the software requirements for the security computer system. Selection of a new manufacturer is expected by April 1992 at which time an implementation schedule will be prepared. This delay also affects the system cutover of alarms and access control operations. A new schedule for these items will be provided in our next LTP semi-annual update.

Upgrade of the E-Field is complete.

Installation of the Video Capture System is complete.

All construction work on the enhancement of the site lighting is complete. During post work testing, we discovered 2 areas (lights) that did not meet the light intensity requirements. One area (light) was corrected in January 1992. The remaining area (light) was completed in February 1992.

Progress and Summary of Changes - March 1992 to August 15, 1992

Construction of a new facility to house the new security system computer is on schedule for completion by December 31, 1992.

Installation of the new backup power supply (diesel generator) is on schedule for completion by December 31, 1992.

The security computer manufacturer was unable to meet contractual obligations to provide the specified system. All involvement with this vendor has been terminated and we are currently evaluating proposals from new manufacturers to supply the specified system. Selection of a new manufacturer is expected in September 1992 at which time an implementation schedule can be prepared. This action also affects the access control system upgrade and system cutover of alarms. Resources are being expended to support completion by December 31, 1993 or sooner if possible. This will be clarified in our next submittal after selection of a computer manufacturer.

Progress and Summary of Changes - August 15, 1992 to February 15, 1993

Construction of facilities to house the new security system is essentially complete except installation of a sprinkler system actuation panel and performance of fire system tests on the sprinkler, CO₂ and alarm system. Completion of these items and approval of occupancy permits is expected in March 1993.

ATTACHMENT 2 (Continued)

SCHEDULE B

Completion of the new backup power system (DG/UPS) has experienced delay due to manufacturer supplied system/equipment problems and their resolutions. Items being resolved are the replacement of DG room louvers to support successful CO₂ system testing and UPS room HVAC system replacement to handle heat load generation. Successful testing of fire suppression equipment will permit fuel loading, DG/UPS testing and commencement of secondary security load cutovers. Completion is now planned in May 1993.

In December 1992, BECo contracted a new security computer manufacturer. System shipment to PNPS is planned for January 1994 to be followed by installation, site acceptance and availability testing for a June 1994 completion. Access Control System upgrades and cutovers will be integrated with this effort to achieve project completion by December 31, 1994.

Progress and Summary of Changes - February 15, 1993 to July 31, 1993

Construction of facilities to house the new security computer system is complete.

Construction of the new backup power system (DG/UPS) is complete and all security power loads are now on the new supply and in final turnover to operations.

In December 1992, BECo contracted a new security computer manufacturer. System shipment to PNPS is planned for January 1994 to be followed by installation, site acceptance and availability testing for a June 1994 completion. Access Control System upgrades and cutovers will be integrated with this effort to achieve project completion by December 31, 1994. This project is on schedule with supporting activities focused on project completion in 1994.

Progress and Summary of Changes - August 1, 1993 - January 31, 1994

Final turnover to operations of the new backup power system (DG/UPS) is complete.

Shipment of the new Security Computer System, previously planned for January 1994 is now planned for March 1994. Following installation, site acceptance and availability testing, we expect an August 1994 completion. The delay is a result of a partially successful Factory Acceptance Test effort. Plans for Access Control System upgrades and cutovers and project completion still support completion by December 31, 1994.

Progress and Summary of Changes - February 1, 1994 - July 31, 1994

In June 1994 the new Security Computer System Hardware, less 2 CCTV switcher panels damaged in shipment preparation, was received from the system supplier. Installation is in progress and Site Acceptance Test (SAT) is planned for August 1994. Following a successful SAT, a cutover of the Access Control System will commence prior to MCO #10 and is planned for completion by December 31, 1994.

A 60-day site availability test run is planned for the first quarter of 1995 after the PNPS Security System is cutover to the new computer system.

This represents a change to the completion schedule.

ATTACHMENT 2 (Continued)

SCHEDULE B

Progress and Summary of Changes - August 1, 1994 - January 31, 1995

Site Acceptance Testing (SAT) of the new Security Computer System was performed September 27 through November 7, 1994. Critical variances to BECo specifications were resolved and the system was accepted with the activation of the new Central Alarm System (CAS) and Secondary Alarm station (SAS) on January 22, 1995. Work is ongoing to resolve the remaining non-critical variances and the upgrade/cutover to the access control system prior to RFO # 10 in March 1995.

At the end of RFO #10, a site availability run, with the entire network, will be conducted to demonstrate a continuous operation of the computer system over a period of 60 days (1440 hours) with an availability of 99.50% or more.

Progress and Summary of Changes - February 1, 1995 - July 31, 1995

The original commitment for this LTP item to make miscellaneous perimeter improvements, install new security computer system facilities, a new security computer and access control system and a backup power supply have all been met.

Contractual work with the computer manufacturer continues to resolve the remaining non-critical variances to the BECo specification. The upgrade/cutover to the access control system was completed prior to RFO #10.

Currently we are working to start a computer system site availability run to demonstrate a continuous operation of the computer system over a period of 60 days (1440 hours) with an availability of 99.50% or more. Completion of this contractual activity will begin the warranty period. This activity is not part of the committed work scope.

A new commitment was identified to complete upgrade and cutover of Video Capture System to the new computer system by August 31, 1995 (IFI 95-12-01) as part of LTP #029. This item has been completed.

All committed work is complete and this item will be removed from future updates.

SCHEDULE B

IMPLEMENT ROOT CAUSE AND CORRECTIVE ACTIONS TO ADDRESS CAUSES OF WELD FAILURE

(LTP #292)

Commitment Description

Provide operator access to RHR Vent Valves, Low Pressure Emergency Core Cooling System (LPECCS) Vibration Monitoring, replace RHR Discharge Pressure Switches (Low Pressure Alarm), collect data on throttling globe and gate valves that could cause erosion and vibration problems and determine if alternatives are required. Review of methods to establish MOV thrust will be performed as part of our Generic Letter 89-10, Motor Operated Valve Testing effort.

Reference

BECo Letter 88-140, dated September 28, 1988
(Appendix 10 Items #01-013-01 & #03-916-06)

Commitment History/Progress

Progress and Summary of Changes - March 1989 to February 1990

On Schedule for RFO #8.

Progress and Summary of Changes - February 1990 to November 1990

- Operator access to RHR Vent Valves is on schedule for completion by RFO #8.
- LPECCS Vibration Monitoring is on schedule for completion by RFO #8.
- Investigate alternatives to throttling globe and gate valves and review methods to establish MOV thrust are on schedule for completion by RFO #8.
- Replace RHR Discharge Pressure Switches (Low Pressure Alarm) is on schedule for completion by RFO #8.

Progress and Summary of Changes - December 1990 to February 1991

- Operator access to RHR Vent Valves is on schedule for completion by RFO #8.
- One area has been determined to require a permanent modification to facilitate venting. Re-routing of the vent lines for valves 10-HO-397/398 will be performed during RFO #8.
- LPECCS Vibration Monitoring is installed. Additional monitoring will be performed during RFO 8.
- Collect data on throttling globe and gate valves that could cause erosion and vibration problems will be performed during RFO #8.
- Evaluate collected data on throttling globe and gate valves to determine if alternatives are required will be performed post RFO 8.

ATTACHMENT 2 (Continued)

SCHEDULE B

- Review of methods to establish MOV thrust will be performed as part of our Generic Letter 89-10, Motor Operated Valve Testing effort (LTP #487).
- Replace RHR Discharge Pressure Switches (Low Pressure Alarm) is on schedule for completion by RFO #8.

Progress and Summary of Changes - March 1991 to August 1991

- Operator access to RHR Vent Valves is complete
- Re-routing of the vent lines for valves 10-HO-397/398 is complete.
- Additional LPECCS vibration monitoring was performed during RFO #8. The LPECCS vibration monitoring system was activated to monitor during the shutdown cooling mode. The system was set to continuously monitor various accelerometer locations to trigger an alarm upon high vibration due to a water hammer event or valve cavitation. No system activation occurred at the established setpoints and no failure of vent or drain welds were discovered during the last operating cycle. We attribute this reduction in water hammer events to the activities undertaken to enhance venting capabilities as mentioned above and changes made to operator venting instructions such as backflushing to remove any steam bubbles prior to venting. Therefore, we intend to continue the monitoring during the present fuel cycle with lower setpoints. More attention will now be focused on vibration related to steady-state flow and valve cavitation. Steady-state vibration data will be recorded from each data point with the system operating in the torus cooling and mixing modes at various flow rates. An analysis of this steady-state vibration will then be performed. Based on the results of the analysis, additional vibration surveys of the piping system may be performed using portable vibration instrumentation. During the next mid-cycle outage, similar monitoring will be performed with the system in the shutdown cooling mode. Once the vibration under these conditions has been analyzed, we will determine the need for any alternative activities.
- Replace RHR Discharge Pressure Switches (Low Pressure Alarm) is complete.

Progress and Summary of Changes - August 1991 to February 1992

Vibration monitoring has been conducted since RFO #8 for ten monitoring locations identified as areas of particular interest by previous investigations. Based upon preliminary monitoring to date, the trigger level for alarming and data acquisition was lowered. Previously, the system was set to trigger on potentially high level transients caused by water hammer events. In the absence of any of these transients, the alarm levels are now set to detect lower vibration levels indicative of valve throttling and/or cavitation. Monitoring and data recording of these ten locations will continue. Particular attention will be given to shutdown cooling, suppression pool cooling, and surveillance testing.

Progress and Summary of Changes - March 1992 to August 15, 1992

Monitoring and data recording of the ten locations is continuing. Shutdown cooling, suppression pool cooling, and surveillance testing monitoring will be performed during MCO 9. The need for alternative activities will be determined once the vibration under these conditions has been analyzed. Corrective actions previously taken appear successful; no failures occurred during this report period.

SCHEDULE B

Progress and Summary of Changes - August 15, 1992 - February 15, 1993

Monitoring of the original ten locations was completed in MCO 9. The data evaluation is in progress. ISI inspections during MCO 9 found one RHR lateral restraint with failed structural welds. Additional strain gauge and vibration monitoring was done immediately after repair of the support. A root cause analysis has shown that normal system startup transients were the primary cause of low cycle fatigue failure. Support modifications are being designed to prevent recurrence. A schedule will be provided in the next LTP submittal.

Progress and Summary of Changes - February 15, 1993 - July 31, 1993

The final root cause evaluation and related calculations for the failed RHR lateral restraint (H10-1-102S) determined that steady-state vibration stress levels are negligible versus the normal system startup transient stresses. Steady-state vibration, therefore, did not contribute to the failure of this support. The final evaluation included a conceptual design for a new RHR lateral restraint to be added to share the startup transient loads with the existing seismic restraints. The detailed piping design calculation for RHR is now being revised to include the conceptual support modifications so that the suitability of the modification can be evaluated. The detailed support design will then be done to produce a Plant Design Change package. It is anticipated that the modifications can be done with the plant on-line in 1994.

Progress and Summary of Changes - August 1, 1993 - January 31, 1994

A plant design change to address vibration related support failures on the RHR piping is being prepared by engineering and the modifications will be completed in 1994. RHR lateral restraint H10-1-102S will be modified to withstand the system startup transient loads that were found to have caused the previous weld failure. No other piping or pipe support weld failures have been detected since this LTP monitoring effort began in 1990. This LTP will be closed when the RHR pipe support modification is completed. If any piping or support failures occur in the future, they will be addressed within the station's Problem Report process.

Progress and Summary of Changes - February 1, 1994 - July 31, 1994

The design changes for RHR restraint H10-1-102S are complete and scheduled for implementation in 1994. This is the final item to be covered by this LTP.

Progress and Summary of Changes - August 1, 1994 - January 31, 1995

Implementation of the design change for RHR restraint H10-1-102S has been deferred to be completed by the end of RFO# 10.

The change was made for ALARA considerations since other work requiring staging in the Torus is expected to be worked in RFO# 10.

Progress and Summary of Changes - February 1, 1995 - July 31, 1995

This item is complete and will be removed from future updates.

SCHEDULE BDETAILED CONTROL ROOM DESIGN REVIEW (G.L. 82-33) (LTP #299, 300, 327, 328, 375)Commitment Description

References 6, 7, and 8 provided a DCRDR Supplementary Summary Report with update information, panel enhancement program information, and a revised DCRDR program plan, respectively. Reference 9 revised the schedule commitments for enhancements to three control panels singled out by BECo for completion ahead of the others.

A final DCRDR Summary Report, Reference 10, was submitted on November 30, 1990. This summary report included detailed scope and schedules for the remainder of DCRDR issues to be implemented at Pilgrim Station. The following summarizes the remaining CRDR commitment schedule:

- Complete installation of control room ceiling lighting improvements (LTP 375) by December 31, 1991 (complete).
- Complete remaining "Category 7" HEDs (non-engineered actions) by March 31, 1992 (complete).
- Complete control panel enhancements (LTP 300 plus portion of LTP 328) by end of MCO 10, except for panel C7. (Complete)
- Complete control panel improvements (balance of LTP 328) by end of RFO 9 (outage portion) and December 31, 1993 (on-line portion), except for panel C7 (complete).
- Begin installation of replacement annunciator in RFO 9 (and complete by RFO 10) (LTP 327). (Complete)
- Complete work related to panel C7 by MCO 10 (Reference 12) (Complete).
- Complete corrective actions from verification activity by RFO 10 + 90 days. (Complete).

References

- 1) NUREG 0737: Item I.D.1
- 2) BECo Letter 84-159, dated September 24, 1984
- 3) NRC Letter 85-157, dated May 16, 1985
- 4) NRC Letter 86-002, dated January 6, 1986
- 5) BECo Letter 87-008, dated January 20, 1987
- 6) BECo Letter 89-064, dated May 2, 1989
- 7) BECo Letter 89-102, dated July 6, 1989
- 8) BECo Letter 89-112, dated July 24, 1989
- 9) BECo Letter 90-008, dated January 11, 1990
- 10) BECo Letter 90-147, dated November 30, 1990
- 11) BECo Letter 91-099, dated July 31, 1991
- 12) NRC Letter 92-178, dated July 13, 1992
- 13) BECo Letter 92-128, dated November 13, 1992
- 14) BECo Letter 95-010, dated February 2, 1995

Commitment History/Progress

Progress and Summary of Changes - March 1989 to February 1990
 Submit Supplementary Summary Report - Complete

ATTACHMENT 2 (Continued)

SCHEDULE B

Progress and Summary of Changes - February 1990 to November 1990

- The final DCRDR Summary Report was submitted November 30, 1990.
- As a result of ongoing human factors evaluations, the scope of control room panel enhancements has expanded beyond those committed in Ref. 7. The on-line portion is planned to be completed by June 30, 1992; the outage portion is planned for completion by the end of RFO #9. The extent of enhancements to be performed in RFO #8 and those to be performed on a later schedule are detailed in the November 30, 1990 Final DCRDR Summary Report submittal. The next LTP update will reflect the revised scope and schedule of the summary report.
- We have determined improvements to control room lighting can be implemented on line. Therefore we are revising the previous completion date of the end of RFO #8 to completion by December 31, 1991. We plan to install the lighting improvements on-line before RFO #8. However, in the event they are not completed before RFO #8, we will complete them by December 31, 1991.

Progress and Summary of Changes - December 1990 to February 1991

Currently, work to accomplish the items listed in Reference 10 is on schedule.

Progress and Summary of Changes - March 1991 to August 1991

The following improvements were implemented during RFO #8:

- Installed welded patches to restore all main control panels to uniform flat, flush, smooth surface suitable for painting and for installation of improvements.
- Repainted all control panels in main operating area, and began effort to repaint the "back panels."
- Replaced labels and installed new mimics and demarcations on 10 panels, plus revisions to mimics and labels on additional panels
- Completed removal of abandoned equipment from Main Control Panels.
- Replaced approximately 325 switch escutcheons and 200 switch handles.
- Rewired or replaced 17 switches, continuing a program to achieve uniform switch positions and patterns.
- Rearranged 3 groups of switches and 3 groups of indicators to achieve more logical arrangement.
- Installed an additional set of scram and MSIV indicators on Panel C905.
- Replaced 6 meter scales with scales improved in readability; more to be installed on-line, after RFO #8.

In Reference 11, we notified the NRC that we will not be implementing switch rearrangements for the Safety Relief Valves. The work to accomplish the remaining Reference 10 items is on schedule.

Progress and Summary of Changes - August 1991 to February 1992

- Planned construction of improved ceiling lighting was completed by December 1991. Post-work testing was completed in January 1992. Post-work testing identified the need for one additional fixture in the back panel area that will be installed during the next report period.

ATTACHMENT 2 (Continued)

SCHEDULE B

- Procedure revisions and other non-engineered corrective actions in "Category 7" were completed except for one HED relating to an EOP display space. An improved EOP display stand is expected to be installed by June 30, 1992.
- Installation of control panel enhancements (labels, mimics, demarcation) were continued in the control room and simulator.
- Efforts continue on the preparation of design packages for panel improvements to be installed in the 1992 Mid-cycle Outage and in RFO 9 (1993).
- We continued the signal-by-signal review of annunciator system and initiated the planning effort to establish scope and schedule for the annunciator upgrade.
- Plans are being made to finish re-painting the Control Room back panels with a target completion date of September 1, 1992.
- Installation of improved instrument scales continued in RFO #8. Some of the instrument scales originally scheduled for replacement in RFO 8 were not installed because of emergent technical issues. It is expected that the scale replacement program will be completed by the end of RFO 9 as originally scheduled.

Progress and Summary of Changes - March 1992 to August 15, 1992

- Completed installation of one additional light fixture in control room ceiling which completes physical work on control room lighting.
- Completed installation of EOP support stands in control room and simulator which completes Category 7 actions, as previously planned.
- Completed installation of control panel labels, mimics, and demarcations on control room panels in original (LTP 300) scope, as planned, including marking of RG 1.97 devices.
- Completed preparation of engineering change packages for CRDR modifications to be implemented in 1992 mid-cycle outage and in RFO 9, as planned.
- Initiated detailed design of annunciator replacement project.
- Continued re-painting of control room panels and began repainting of simulator panels. All front panels and the majority of the back panels are now complete.
- Conducted task analysis and prepared conceptual designs of panel C7 redesign in preparation for decision on scope and final design. The changes related to Panel C7 are as follows: (a) redesign of Panel C7, referred to in Reference 10, Appendix D as Package 16; (b) redesign N2 portion of C904, Package 20; (c) Replace Kaye Recorder, Package 22; and (d) rewire C7 switches (no package number). As previously documented in Reference 12, this work will be done in MCO94 due to the long lead time for the design and procurement of the new panel.
- The following establishes schedules for two items: (a) Replacement of instrument scales is now expected to be completed by the end of RFO 9. (b) The "priority paging" modification (Page III-18 of Reference 6) was installed in 1989. We are re-evaluating the adequacy of the priority paging feature as well as possible changes to the basic Gai-Tronics configuration. If more extensive modifications are undertaken, the scope and schedule will be provided in the next LTP update letter.

ATTACHMENT 2 (Continued)

SCHEDULE B

- Colored zone markings on instrument scales as described in Reference 10 (Page III-16) and the use of Light Emitting Diodes (LEDs) to replace indicator light bulbs continue to be worked as elective actions being done as part of the DCRDR project.

Progress and Summary of Changes - August 15, 1992 - February 15, 1993

- Implemented the following modifications during the 1992 mid-cycle outage, as planned:
 - Rearranged post-accident sampling panels C174-C175
 - Relocated reactor water cleanup control switches
 - Relocated feedwater block valve control switches
 - Rearranged area temperature annunciator modules
 - Modified position indication lights for HPCI and RCIC turbine control and stop valves. One portion of this package (related to the HPCI governor valve) could not be completed owing to late material delivery and will be completed in RFO 9.
 - Replaced RBCW temperature recorder
- Completed re-painting control panels in the Main Control Room and at the simulator.
- Completed the evaluation of LEDs as potential replacements for ET-16 indicator lamps. Concluded that currently-available products are not adequate for replacement of ET-16s. This modification will, therefore, not be implemented.
- Continued engineering change packages for annunciator replacement project including portions to be implemented in 1994 mid-cycle outage and in RFO 10, as planned. Placed purchase order for replacement annunciator system, having selected a Beta microprocessor-based system.
- Continued on-line work to install replacement meter and recorder scales.
- The following establishes a schedule for the annunciator replacement project (LTP 327). The annunciator will be installed beginning in RFO 9 as previously committed, and will be completed by the end of RFO 10 (previously uncommitted).
- Continued evaluation of the prospective changes to the plant paging system. As indicated in our previous LTP submittal, we no longer plan to complete the "priority paging" system. Instead, we are developing scope of work for changes that will include efforts to address the difficulty of communicating to and from rotating machinery spaces. This was the subject of the initial HED. We expect to be able to provide a scope and schedule in the next LTP update.

Progress and Summary of Changes: February 15 - July 30, 1993

- Implemented the following modifications during the 1993 refueling outage (RFO 9) as planned:
 - Rewired or replaced 29 control switches, continuing the program to achieve uniform switch positions and patterns. This completes the switch rewiring effort, except for switches on panel C7.
 - Replaced colored lens caps on approximately 1400 indicating lamps to standardize on lamp colors.
 - Rearranged indicating lights for electrical buses and breakers.
 - Continued the program to replace meter and recorder scales. We now expect to complete action on the remaining meters by the end of the 1994 mid-cycle outage; meters will be replaced on-line to the extent practical.

ATTACHMENT 2 (Continued)

SCHEDULE B

- Installed digital indicators to replace analog indicators for torus temperature, RHR flow, and drywell temperature.
 - Completed the installation of valve position indication for the HPCI governor valve.
 - Installed direct indication of valve position for CV9068A/B by replacing the solenoid valves with valves containing integrated reed switches for position indicators.
 - Relocated two conductivity recorders to allow easier monitoring.
 - Installed power-available indication for the 120 VAC busses.
 - Rewired field terminations in preparation for annunciator installation (begin in RFO 9 and complete on-line).
 - Installed enhancements on scram breakers.
 - Continued engineering change packages for the annunciator replacement project; completed the package for the installation of the central processor and associated components planned for installation in 1994. Completed Factory Acceptance Test of microprocessor system; system delivered.
- Currently re-evaluating the scope and schedule for the remaining work pertaining to panel C-7 and the annunciator. These will be discussed in the next LTP update or an interim submittal
 - Reconsidered and canceled the replacement of analog reactor water level and reactor pressure indicators with digital indicators. A sample digital indicator installed at the simulator did not meet operator needs for clarity. Replacement was not essential for CRDR because the original HED has been resolved by changes to the Emergency Operating Procedures.
 - Continued evaluation and planning related to the plant paging system. To address the initial HED related to communicating to and from noisy areas, we have procured and satisfactorily tested wireless headsets for use in such areas. This will close the initial HED.
 - Completed installation of labels, mimics, demarcations and other enhancements under LTP 300. This completes the scope of LTP 300 except for the meter scale efforts described above.
 - Continued installation of enhancements under LTP328. We expect to complete the on-line scope of LTP 328, including remaining enhancements, by December 31, 1993, as planned.

Progress and Summary of Changes - August 1, 1993 - January 31, 1994

- Completed installation of new Gai-Tronics page stations in the main control room, as planned.
- Continued installation of meter scales and replacement meters, as planned. We expect to complete the meter scale program before or during the 1994 mid-cycle outage (MCO10)
- Continued installation of other enhancements on-line in 1993 and continuing in 1994. Remaining enhancements under LTP328 (2 sets of panel labels) are expected to be completed next month which will complete the planned enhancements program.

In summary, remaining corrective actions for this project will be implemented by the end of MCO #10, except for the Annunciator which will be installed in RFO #10.

- Reached final agreement on the scope of panel C7 modifications (containment ventilation and gas treatment panel). Selected high-priority HEDs will be resolved by equipment

ATTACHMENT 2 (Continued)

SCHEDULE B

modifications, relocations, and enhancements. The Kaye multi-channel recorder now on Panel C7 will be replaced by a microprocessor-based system to be installed in the main control area. Installation of modifications that began in late 1993 is continuing during on-line operations in 1994 and will be completed in MCO10. The Kaye replacement system has been delivered and is being tested in preparation for installation.

- Continued engineering, procurement and installation of the annunciator replacement. Field wiring termination work that began in the 1993 refueling outage was completed. The replacement microprocessor system was delivered and tested. Training was conducted on operation and maintenance of the system.

Progress and Summary of Changes - February 1, 1994 - July 31, 1994

- Continued installation of meter and recorder scales and replacement meters as planned. (One recorder scale remains to be replaced.)
- Completed installation of enhancements (panel labels) on 2 final panels under LTP 328.
- Continued preparations for remaining work, including issuance of final engineering package for annunciator replacement.
- Began on-line installation of modifications to panel C7, Kaye temperature computer, and annunciator. (These modifications will be completed in MCO 10 (C7 and Kaye) and RFO 10 (annunciator). Portions of the Kaye temperature computer and the annunciator are operational.
- A new data acquisition system with a "state-of-the-art" operator interface (touch screen) has been installed as part of the Kaye recorder replacement.
- Took delivery of simulator version of annunciator hardware and began installation.
- This project (except for the annunciator) will be completed by December 31, 1994.

Progress and Summary of Changes - August 1, 1994 - January, 1995

- Replaced scales on one recorder, as planned, which completes the committed program of meter and recorder scales.
- Completed preparations for work in fall 1994 outage (MCO 10) as well as for remaining on-line work.
- Continued installation of annunciator system, both on-line and during MCO 10. New central processor is now processing alarms from approximately one-half of input points and displaying them on CRT and printer. Replaced window boxes on three panels during MCO 10.
- Installed a new Gai-Tronics station adjacent to Panel C7.
- With the completion of the above-listed work, we have now completed implementation of all committed DCRDR corrective actions except for the annunciator project (planned for completion in RFO 10) and except for action items identified during the verification activity.
- Continued installation of modifications at the simulator, including major portions of the annunciator.

ATTACHMENT 2 (Continued)

SCHEDULE B

- Conducted a verification activity as described in the Program Plan, in which the outside Human Factors Expert reviewed Human Engineering Discrepancies (HEDs) to assure they had been satisfactorily completed and had not created new HEDs. This review identified several minor items for corrective action. Corrective actions to meet original DCRDR commitments were completed in December except for one item. Four switches should be re-wired to conform to convention but cannot be done with the plant on-line. The work is scheduled in RFO 10. Several additional maintenance-type actions have been completed or are being planned. The final verification activity will be conducted after RFO 10.
- More details of the results of the verification activity were provided by separate correspondence (Reference 14).

Progress and Summary of Changes - February 1, 1995 - July 31, 1995

- Completed installation of the new annunciator system at Pilgrim. The system has been tested, turned over to Operations and is in use. Verification process is also complete.
- Completed physical installation of the annunciator system at the simulator. The system is operational and in use for training. Additional software development is underway, to provide emulation of additional operating features.
- Completed re-wiring of four switches to conform to convention and completed several other minor corrective actions identified by the verification process.
- All committed work for the project is complete. This item will be removed from future LTP updates.

SCHEDULE B

NEUTRON FLUX MONITORING (LTP #377)

Commitment Description

Generic Letter 82-33 required utilities to report on implementation of Regulatory Guide 1.97. Boston Edison, and some other utilities with Boiling Water Reactors, took exception to requirements related to neutron flux monitoring systems. Subsequently, the BWR Owners Group submitted NEDO-31558 that proposed alternate criteria for neutron flux monitoring. NRC issued a safety evaluation and accepted the NEDO-31558 criteria in Reference 1.

In Reference 2, the NRC requested utilities to review the neutron flux monitoring instrumentation against the NEDO-31558 to determine whether the installed system meets the criteria and to submit a letter to the NRC with the results of the review.

Boston Edison's reply (Reference 3), identified that Pilgrim Station met the criteria of NEDO-31558 with certain clarifications and exceptions.

Our exception concerned the requirements for uninterruptible power supplies (Criterion 5.2.8 of NEDO-31558). Boston Edison took exception and provided a basis for the acceptability of the present Pilgrim Station design (Reference 3). We are taking no further action on this item.

In Reference 3, Boston Edison committed to perform an analysis of the ATWS conditions in the drywell for comparison with NMS design specifications. We further stated we would be working with other BWR owners on this issue.

References

- 1) NRC Letter dated January 13, 1993 from A. Boyer to C.L. Tully, BWR Owner's Group
- 2) NRC letter dated August 11, 1993, Reg Guide 1.97, BWR Neutron Flux Monitoring (TAC M77660)
- 3) BECo letter 93-136 dated October 21, 1993

Commitment History/Progress

Progress and Summary of Changes - August 1, 1993 - January 31, 1994

As planned, Boston Edison has joined with several other BWR owners through the BWR Owners Group to sponsor an analysis to determine the ATWS environment and to compare the calculated temperatures with design specifications. The BWROG task is underway and expected to be complete in approximately 6 months. We will provide an update on the analysis and its results in the next LTP update at which time we expect to be able to identify what, if any, additional efforts will be required.

Progress and Summary of Changes - February 1, 1994 - July 31, 1994

As planned, Boston Edison supplied various input data on plant parameters to GE for their use in modeling the containment and plant systems for the ATWS analysis. (Three other utilities are also participating in the task and are supplying corresponding data.)

GE and the BWROG now expect to complete the ATWS analysis and issue the preliminary report to sponsoring utilities in early December, 1994.

We will provide an update on the analysis and its results in the next LTP update. By that time, if the analysis has been available for sufficient time, we expect to be able to identify what, if any, additional efforts will be required.

ATTACHMENT 2 (Continued)

SCHEDULE B

Progress and Summary of Changes - August 1, 1994 - January 31, 1995

We continued to supply input data to General Electric and to coordinate with the BWROG and other participating utilities on various questions regarding the analysis. GE has not, however, issued their report. we now expect a report in late April, 1995. We will provide further information in the next LTP update and should then be able to identify what further action will be taken.

Progress and Summary of Changes - February 1, 1995 - July 31, 1995

Boston Edison has received and reviewed the draft final report from GE of their analysis to determine the ATWS environment for neutron monitoring equipment. From our review, we expect to require testing to demonstrate that one or more components (cables, connectors) are adequate for the ATWS conditions. We plan to have test results by the end of 1996.

If testing and analysis are unable to demonstrate the adequacy of the affected components, replacements will be scheduled for a future refueling outage.

SCHEDULE BLOW PRESSURE TURBINE ROTOR REPLACEMENT PROJECT (LTP #401)Commitment Description

As a result of a generic industry concern of cracking in shrunk-on wheels of low pressure rotors, General Electric issued TIL857-3 in 1978 which outlined a newly designed testing process known as the "Wheel Sonic Test". When General Electric inspected the PNPS low pressure rotors for this phenomenon in 1980, these cracks were discovered in the axial keyway. Inspections in subsequent refueling outages have determined that some of the existing cracks have propagated and a few new cracks have formed over the succeeding operating cycles.

The shrunk-on wheels on the low pressure rotors have identified cracks in the hub and web regions of the keyways on 8 stages of LP B rotor and 8 stages of the LP A rotor. These cracks are individually less than the lower bound critical crack sizes. Dovetail cracking near the tangential entry slot was indicated by ultrasonic test performed on LP A rotor during RFO9. Some buckets were removed from the 6G-stage and additional cleaning, magnetic particle testing, and grinding were performed. Removal of 3 buckets at two of the worst indications showed that the crack size was decreasing and further grinding was suspended. The buckets were reinstalled and the turbine was reassembled. Other indications were noted on the 5G & 6T wheels. Erosion/corrosion of the inner casings for LP A and B required repairs in RFO 8 and RFO 9, respectively. Deterministic analysis of the keyway cracks was performed by Structural Integrity Associates and showed that the rotor could be safely operated for an additional cycle. New LP rotors are scheduled for installation during RFO 10.

Commitment History/Progress

Progress and Summary of Changes - February 15, 1993 - July 31, 1993

- Bids were received and evaluated for various replacement options. A letter of intent was issued to General Electric Company on July 2, 1993.
- The scope of work for this project includes replacement of existing rotors with new monoblock rotors, new inner casings and new L-O and L-1 stage diaphragms.
- The new LP rotors are scheduled for installation during RFO #10.

Progress and Summary of Changes - August 1, 1993 - January 31, 1994

- The project continues on schedule for installation during RFO #10.
- A joint design review of the rotors and inner casings was successfully completed in December, 1993.
- Forgings for both rotors are in rough machining and heat treating phases of production. The inner casing sub supplier to General Electric Company has been selected and will start ordering materials approximately February 1, 1994.

Progress and Summary of Changes - February 1, 1994 - July 31, 1994

- The project continues on schedule for installation during RFO #10.
- MCO 10 work will include rotor coupling and condenser neck measurement work to support RFO 10 installation.

ATTACHMENT 2 (Continued)

SCHEDULE B

- Major turbine valve maintenance normally scheduled for RFO 10 will be performed during MCO 10 to maximize available floor space during RFO 10.

Progress and Summary of Changes - August 1, 1994 - January 31, 1995

- The project continues on schedule for installation in RFO # 10.
- MCO # 10 work to support RFO # 10 installation, including major turbine valve maintenance, was completed.

Progress and Summary of Changes - February 1, 1995 - July 31, 1995

- Low pressure rotors, inner casings, and L-0 and L-1 diagrams were successfully replaced with new components during RFO-10. This item will be removed from future updates.

SCHEDULE BSEISMIC VERIFICATION PROGRAM (G. L. 87-02) (LTP #410, 567)Commitment Description

The NRC's final Supplemental Safety Evaluation Report (SER) on Revision 2 of the Generic Implementation Procedures (GIP-2) for A-46 was issued via Generic Letter 87-02, Supplement 1, on May 22, 1992 (Reference 4). By September 21, 1992, each licensee was required to respond to the SER stating whether they intend to follow the GIP-2 guidance, provide a schedule for implementation of the GIP including submission of a report summarizing the results of the A-46 review, and provide information on the procedures and criteria used to generate the in-structure response spectra used for A-46 implementation. Evaluation of equipment is to include (a) adequacy of equipment anchorage; (b) functional capability of essential relays; (c) identification of potential outliers and deficiencies; and (d) seismic systems interactions.

In our response (Reference 5), we committed to implement GIP-2 in its entirety and provided a description of the procedures and criteria used to generate the in-structure response spectra. A schedule of GIP-2 implementation and submission of a summary report was deferred to the February 1993 LTP semi-annual update (provided below).

In Reference 6, the NRC issued a Safety Evaluation Report (SER) approving our response. The SER assumed a commitment on BECo's part to implement the GIP-2 in its entirety and noted our in-structure response spectra should be treated as median-centered. We affirmed the NRC assumption to be correct in Reference 7 and clarified our continued commitment to implement the seismic verification program at Pilgrim Station through the GIP-2 and its subsequent revisions.

Our schedule for completion of the GIP and submission of a summary report is scheduled for 6/30/96. This schedule is consistent with the 3-year completion recommended in SSER Section II.4.2.3 that specifies commencement of the 3-year period will begin when one of the following conditions is met:

- Receipt of staff approval of the in-structure response spectra to be used to resolve the USI A-46 (i.e. Reference 6).
- 60 days following the licensee's initial submittal of acceptable procedures and criteria in generating those in-structure response spectra.

References

- 1) NRC Letter dated February 19, 1987, GL 87-02
- 2) BECo Letter 88-145, dated October 11, 1988, Response to GL 87-02
- 3) NRC Letter dated June 7, 1989, Acknowledgment of BECo Response
- 4) NRC Letter dated May 22, 1992, Generic Letter 87-02, Supplement 1,
- 5) BECo Letter 92-109, dated September 21, 1992, Response to GL 87-02, Supplement 1
- 6) NRC Letter dated November 18, 1992, SER of PNPS Response to GL 87-02, Supplement 1
- 7) BECo Letter 93-019, dated February 11, 1993, Additional Information Regarding NRC SER of PNPS Response to GL 87-02, Supplement 1
- 8) BECo Letter 94-16 dated February 9, 1994, Additional Response to GL 87-02, Supplement 1
- 9) NRC letter dated June 17, 1994, Re-evaluation of Approval for Developing Floor Response Spectra for the Resolution of USI A-46.

SCHEDULE B

Commitment History/Progress

Progress and Summary of Changes - March 1989 to February 1990

- A. Develop safe shutdown equipment list - Schedule Revised
- B. Recreate original seismic design basis documentation - Schedule Revised
- C. Training and commence walkdown of accessible areas - Schedule Revised

The schedule for performing these three items was revised from Cycle 8 to Cycle 9 as a result of our re-assessment of the work to be performed for this seismic issue, with respect to the generic work scope for other similar existing and emerging seismic issues. By incorporating the similarities of work scope for each of the below listed issues into one set of physical activities, we can best optimize our resources. Other seismic issues include:

- Seismic Design Basis (USI A-40)
- Eastern Seismicity and Seismic Design Margins
- External Events (seismic) for Individual Plant Examinations

Progress and Summary of Changes - February 1990 to November 1990

- A revised schedule for implementation of the seismic verification program will be developed after issuance of the NRC SER resolving the GIP open issues.

Progress and Summary of Changes - December 1990 to February 1991

- No changes from the previous report period.

Progress and Summary of Changes - March 1991 to August 1991

- A schedule for implementation of the seismic verification program will be developed after issuance of the NRC SER resolving the GIP open issues.

Progress and Summary of Changes - August 1991 to February 1992

- A schedule for implementation of the seismic verification program will be developed after issuance of the NRC SER resolving the GIP open issues.

Progress and Summary of Changes - March 1992 to August 15, 1992

- Reference 4, issued the final NRC SER (SSER No. 2) resolving the GIP open issues and superseded all previous NRC SER documents. A response containing the following information will be made by September 21, 1992:
- A statement whether we commit to use both the SQUG commitments and the implementation guidance provided in GIP-2 as supplemented by the SSER No. 2 for the resolution of USI A-46.
- A plant-specific schedule for the implementation of the GIP and submission of a report summarizing the results of the USI A-46 review.
- Detailed description of the procedures and criteria used to generate the in-structure response spectra.

ATTACHMENT 2 (Continued)

SCHEDULE B

Progress and Summary of Changes - August 16, 1992 - February 15, 1993

- Three BECo personnel and a contractor have completed the GIP Seismic Walkdown and Evaluation SQUG Training Program.
- A safe shutdown equipment list has been developed and is undergoing final review and approval.
- A portion of the seismic walkdowns began in MCO #9. On-line walkdowns continue during operating cycle 9. Outage walkdowns are planned for RFO 9 with any further on-line portions in operating cycle 10. Remaining off-line portions will be done in MCO 10 and RFO 10.
- At BECo's request, a meeting was held in our Braintree offices on September 3, 1992, in which we presented our intended approach to A-46 resolution and solicited NRC feedback prior to preparing our Generic Letter 87-02 response letter.

Progress and Summary of Changes - February 16, 1993 - July 31, 1993

- Walkdowns scheduled for RFO 9 were completed and other walkdowns are continuing while on-line. The goal is to minimize the impact of performing walkdowns during an outage where safe and practicable.
- Relays associated with the safe shutdown equipment list are being assessed via a full circuit analysis. This is a task being worked by Engineering and Operations.
- The majority of the SSEL equipment and relay evaluations are expected to be completed by RFO 10.
- Cabinet tray walkdowns have been completed and the evaluations are expected to be completed by RFO 10.
- Four more engineers have completed the SQUG Walkdown Screening and Seismic Evaluation Training Course (Total of 7 engineers now certified).

Progress and Summary of Changes - August 1, 1993 - January 31, 1994

- Remaining SSEL walkdowns have been planned and scheduled for MCO #10.
- Relay evaluations are nearing completion. Discussions between engineering and operations concerning essential relay designation is progressing.
- A letter requesting a review of our A-46 plan has been sent (Ref. 8). We have completed an initiative that demonstrates the conservatism of the PNPS design basis spectra. This would justify it to be classified as a "conservative design" spectra for A-46 implementation.
- Documentation packages are being assembled to support close-out.

Progress and Summary of Changes - February 1, 1994 - July 31, 1994

- Final SSEL walkdowns are scheduled for MCO #10.
- Seismic Evaluation Work Sheets for SSEL components are progressing.

ATTACHMENT 2 (Continued)

SCHEDULE B

- NRC approved PNPS classification as a "conservative design" spectra for A-46 implementation above 4Hz.
- Relay qualification has been initiated.

Progress and Summary of Changes - August 1, 1994 - January 31, 1995

- Final SSE walkdowns are scheduled for RFO # 10
- Relay qualification is progressing
- We have rescheduled the report submittal date to 6/96. Greater than 90% of the walkdowns are complete. However, completion has been slowed by the temporary reassignment of uniquely qualified personnel to support significant emergent issues, e.g., the extended main generator forced outage, and the core shroud repair preparation.

Progress and Summary of Changes - January 31, 1995 - August 1, 1995

- SSEL walkdowns are now completed.
- Relay qualification is approaching completion
- Seismic Evaluation Work Sheets (SEWS) development is nearing completion.
- Final report will be started in the 4th quarter. Submittal in June 1996 remains unchanged.

SCHEDULE B

GENERIC LETTER 89-13, SALT SERVICE WATER SYSTEM (LTP #255, 473)

Commitment Description

Generic Letter 89-13 required licensees to review and evaluate the adequacy of the service water system and all safety related heat exchangers. The review identified a number of enhancements to the PNPS programs and procedures. As a result, BECo committed via Reference 2 to the following:

- Prior to end of RFO #8, modify the RBCCW heat exchanger test procedures to include an analytical model to calculate RBCCW heat exchanger performance at test and design conditions (complete). Conduct tests with modified procedures during Cycle 9. (Complete)
- Prior to end of RFO #9, modify the RHR heat exchanger test procedures to include an analytical model to calculate RHR heat exchanger performance at test and design conditions. Conduct tests with modified procedures during Cycle 10. (Complete)
- Develop a regular maintenance/test program on heat transfer capability of the remaining heat exchangers by RFO #9. (Complete)
- Conduct a Single Failure Analysis for the RBCCW subsystem by end of RFO #8. (Complete)
- Prior to end of RFO #8, upgrade the licensed operator training module to include a loss of all service water. (Complete)

Credit was also taken in Reference 2 for the SSW piping inspection and replacement program already underway at Pilgrim, which henceforth will be integrated as part of our Generic Letter 89-13 implementation efforts.

References

- 1) Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related Equipment"
- 2) BECo letter 2.90.047, dated April 2, 1990, "Response to Generic Letter 89-13"

Commitment History/Progress

Progress and Summary of Changes - March 1990 to November 1990

- The licensed operator training module upgrade is complete.
- There are no changes to the other above-described commitments and schedules.

Progress and Summary of Changes - December 1990 to February 1991

- A single failure analysis of the RBCCW subsystem has been performed.
- There are no changes to the other above-described commitments and schedules.

Progress and Summary of Changes - March 1991 to August 1991

- RBCCW heat exchanger test procedures have been modified to include an analytical model to calculate RBCCW heat exchanger performance at test and design conditions.

ATTACHMENT 2 (Continued)

SCHEDULE B

- In addition, activities associated with SSW piping inspection and replacement are being integrated under our GL 89-13 effort. Further inspections of the SSW piping will be scheduled during each planned mid-cycle or refueling outage of sufficient duration. It remains our intention to replace SSW piping when the inspection of piping shows that to be necessary.

Progress and Summary of Changes - August 1991 to February 1992

- Efforts to enhance the Salt Service Water System are proceeding as indicated in our response to Generic Letter 89-13. There are no changes to the above-described commitments.

Progress and Summary of Changes - March 1992 to August 15, 1992

- A decision was made to replace the buried SSW piping with corrosion-resistant titanium. Five Plant Design Change Packages were prepared to facilitate replacement of the pipe. Construction of a pipe vault at the intake structure is in progress. Replacement activities will continue through MCO9 and RFO9. Above ground piping will be routinely examined by non-destructive technology (typically UT) and will be replaced as required. Efforts to enhance the SSW system are proceeding as indicated above.

Progress and Summary of Changes - August 15, 1992 - February 15, 1993

- There are no changes to the GL 89-13 (LTP 473) commitments described above.
- We are currently installing replacement SSW underground piping (LTP 255) in preparation for system tie in RFO #9 (4/93). To support this effort, during MCO 9 (10/92) we replaced spool pieces in the Auxiliary Bay and Screen House. We also plan to replace the remainder of the Intake Structure and Auxiliary Bay above ground inlet piping and tie in the new inlet loop buried piping in RFO #9.

Progress and Summary of Changes - February 15, 1993 - July 30, 1993

- RBCCW Heat Exchanger testing was completed on schedule in cycle 9. The RHR Heat Exchanger Test Procedure and Analytical Model was completed on schedule in RFO 9. The Heat Exchanger Maintenance and Test Program for Heat Transfer Capability was also completed on schedule in RFO 9. There are no changes to the remaining GL 89-13 (LTP 473) commitments described above.
- Replacement of the SSW piping (LTP 255) was completed on schedule in RFO 9. Through RFO 9, 250 feet of above ground rubber lined carbon steel pipe has been replaced. In addition, 430 feet of buried rubber lined carbon steel pipe has been replaced with Titanium pipe. Augmented ISI of above ground rubber lined carbon steel pipe was also completed on schedule in RFO 9. Future ISI will be captured under LTP 473. LTP 255 is completed.

Progress and Summary of Changes - August 1, 1993 - January 31, 1994

- There are no changes to the remaining GL 89-13 commitments described above. In summary, RHR heat exchanger tests will be conducted with modified procedures during Cycle 10. Ongoing inspections of the Salt Service Water System have been incorporated into our ISI program.

Progress and Summary of Changes - February 1, 1994 - July 31, 1994

- There are no changes to the remaining GL 89-13 (LTP 473) commitments described above.

ATTACHMENT 2 (Continued)

SCHEDULE B

Progress and Summary of Changes--August 1, 1994 - January 31, 1995

- We performed an extensive self-assessment of the Salt Service Water System and our response to GL 89-13 (Reference 2). We are in the process of developing a plan to address issues and enhancements identified in the self-assessment.
- RHR heat exchanger tests were conducted with modified procedures during Cycle 10. Ongoing inspections of the Salt Service Water System have been incorporated into our ISI program.

Progress and Summary of Changes - February 1, 1995 - July 31, 1995

- We are implementing a comprehensive set of enhancements identified in the Salt Service Water System self assessment (SWSOPI). We plan to implement most of the enhancements prior to the end of 1995, and all of these enhancements are currently scheduled for completion by the end of RFO-11.

SCHEDULE B**GENERIC LETTER 89-10, SAFETY-RELATED MOV TESTING AND SURVEILLANCE**
(LTP #487)**Commitment Description**

Generic Letter 89-10 (Ref. 1) expands the scope of the motor operated valve program required by NRC Bulletin 85-93 and its Supplement, to include additional testing, inspecting, and maintenance for all safety-related motor operated valves.

In our Reference 2 response to the Generic Letter, we committed to develop a program to enhance the maintenance, analysis, and testing already being conducted on MOVs at Pilgrim. The Generic Letter calls for the development of this program within 1 year or one refueling outage from the date of the letter, whichever is later. For BECo, this schedule translates to RFO #8. Our plan was to begin a design basis review of MOVs in the first quarter of 1991 and to begin testing in RFO #9. Based on resource constraints in 1990, we revised the design basis review schedule to commence in the last quarter of 1991. This revision continues to support our commitment to begin testing in RFO #9 and supports our program development schedule. We anticipate the testing will require three refueling outages, based on the extent of known scope. Additional scope determinations as a result of NUMARC and BWROG involvement will be factored into our final scope and schedule as appropriate.

Reference 6 requested Licensees to perform a plant specific safety assessment to determine if generic safety assessments performed by the NRC staff and the BWR Owners' Group are applicable. If MOVs are discovered with potential deficiencies of greater significance than the HPCI, RCIC, and RWCU MOVs, planned activities to address the generic letter were to be re-prioritized accordingly. Notification within 30 days of receipt of Supplement 3 was required verifying a plant-specific safety assessment was performed and identifying whether there were MOVs with deficiencies of greater safety significance than in the HPCI, RCIC, and RWCU systems. An additional notification within 120 days of receipt was also requested to provide the criteria reflecting operating experience and the latest test data applied in determining whether deficiencies exist in the HPCI, RCIC, and RWCU MOVs.

In our Reference 7 letter, we concluded the subject valves in the HPCI, RCIC, and RWCU systems were capable of performing their safety function to provide containment isolation in the event of a line break outside containment. This submittal provided our 30 and 120 day response to the generic letter and precluded having to perform a plant specific safety assessment. We also committed in Reference 7 to conduct diagnostic testing on the Reactor Water Cleanup (RWCU) MO-1201-2 valve during RFO #8. We expanded our planned RFO #8 testing to include 2 additional valves: RWCU MO-1201-5 and Closed Cooling Water MO-4010A.

The NRC issued a Request for Additional Information (RAI) (Reference 10) after reviewing our Reference 7 and 8 responses to GL 89-10 Supplement 3. BECo responded to the RAI on August 29, 1991 (Ref. 11).

During the week of March 9-13, 1992, the NRC conducted an inspection of the PNPS GL 89-10 MOV program. As a result of this inspection Boston Edison committed to resubmit the GL 89-10, Supplement 3, response and accelerate the schedule for priority 1 valves to have the GL 89-10 actions completed by the end of RFO 10.

RFO 10 is scheduled for 1995. The remaining safety-related valves will be completed by the end of RFO #11.

ATTACHMENT 2 (Continued)

SCHEDULE B

References

- 1) Generic Letter 89-10, dated June 28, 1989
- 2) BECo Letter 90-13, dated January 15, 1990
- 3) NRC Letter dated June 7, 1990, Response to Generic Letter 89-10
- 4) NRC Letter dated June 13, 1990, Supplement 1 to Generic Letter 89-10
- 5) NRC Letter dated August 3, 1990, Supplement 2 to Generic Letter 89-10
- 6) NRC Letter dated October 25, 1990, Supplement 3 to Generic Letter 89-10
- 7) BECo letter 90-158 dated December 17, 1990
- 8) BECo Letter 91-022, dated February 26, 1991
- 9) NRC Letter dated April 1, 1991, Meeting Summary BECo/NRC
- 10) NRC Letter dated June 24, 1991, RAI regarding GL 89-10 Supplement 3
- 11) BECo Letter 91-111, dated August 29, 1991
- 12) NRC Letter dated February 18, 1992, Closure of GL 89-10, Supplement 3
- 13) NRC Letter dated February 12, 1992, Generic Letter 89-10 Supplement 4
- 14) NRC Letter dated June 3, 1992, Inspection 50-293/92-80 Motor Operated Valve Inspection.
- 15) NRC Letter dated May 5, 1992, Motor Operated Valve Inspection at PNPS (NRC Inspection Report 50-293/92-80).
- 16) BECo Letter 92-044, Revision to GL 89-10, Supplement 3, Response
- 17) NRC Letter dated June 28, 1993, GL 89-10 Supplement 5
- 18) BECo Letter 93.135, dated October 21, 1993, Response to GL89-10, Supplement 5
- 19) BECo Letter 94.005, dated January 7, 1994, Update to GL89-10, Supplement 3 Response
- 20) NRC Letter dated April 19, 1994, GL 89-10, Supplement 5

Commitment History/Progress

Progress and Summary of Changes - February 1990 to November 1990

- Begin a design basis review of MOVs is on schedule for first quarter of 1991.
- Begin testing is on schedule for RFO #9 (completion within 3 refueling outages).
- 30 day notification in accordance with Generic Letter 89-10, Supplement 3 is planned for submittal by December 13, 1990.
- 120 day notification efforts are planned for submittal by March 13, 1991.

Progress and Summary of Changes - December 1990 to February 1991

- The schedule for commencement of design basis reviews of MOVs is being changed from the first quarter of 1991 to the last quarter of 1991. This schedule revision continues to support our commitment to begin testing in RFO #9.
- Begin testing is on schedule for RFO #9 (completion within 3 refueling outages).
- 30 day and 120 day notifications are complete.
- 3 safety related valves are on schedule for diagnostic testing during RFO #8 (MO-1201-2, 1201-5, and 4010A).
- Development of a Program Plan is on schedule for completion by May 1, 1991.

Progress and Summary of Changes - March 1991 to August 1991

- Commencement of design basis reviews of MOVs is on schedule for the last quarter of 1991.
- Begin testing is on schedule for RFO #9 (completion within 3 refueling outages).
- Diagnostic testing of MO-1201-2, 1201-5, and 4010A was conducted during RFO #8. In addition to this testing, we completed diagnostic testing on the remaining GL 89-10 Supplement 3 MOVs (4 valves) and on another 10 safety related MOVs.
- Development of a Program Plan is complete.

ATTACHMENT 2 (Continued)

SCHEDULE B

Progress and Summary of Changes - August 1991 to February 1992

- Design basis reviews of MOVs continue to support our commitment to begin testing in RFO #9.
- Testing is on schedule to begin in RFO #9 (completion within 3 refueling outages).
- Procedures are in preparation describing design basis review methodology, control of switch settings, and degraded voltage analysis. Additionally, a Nuclear Organization Procedure establishing our MOV program is in final review.
- The schedule for static testing of MOVs has been accelerated and some testing will be done during our mid-cycle outage prior to RFO #9.
- MOVs tested using MOVATS test equipment were reviewed and have been retested using more accurate diagnostic test equipment or been reviewed to ensure there is sufficient margin.

Progress and Summary of Changes - March 1992 to August 15, 1992

- Design basis reviews of MOVs continue to support our commitment to begin testing in RFO #9.
- Testing is on schedule to begin RFO #9.
- GL 89-10 activities will be completed for priority 1 valves by the end of RFO #10.
- Reference 16 submitted a revision to GL 89-10, Supplement 3, response (Reference 8).
- Nuclear Organization Procedure 92M1 "Motor Operated Valve Program" has been approved.
- Procedures describing design basis review methodology and control of switch settings are approved. Draft procedures for degraded voltage of motors are being revised to include temperature effects on available torque. Additional procedures are being developed as necessary.

Progress and Summary of Changes - August 15, 1992 - February 15, 1993

- Design basis review is on schedule to support commitment to complete Priority 1 valves by RFO #10.
- Static testing was performed during MCO 9.
- New state of the art test equipment was purchased that provides direct stem torque and thrust measurements.
- Significant MOV testing, maintenance, and inspections scheduled for RFO 9.

Progress and Summary of Changes - February 15, 1993 - July 31, 1993

- Design Basis Reviews (DBR) and Diagnostic Testing are on schedule to complete Priority I MOVs (55 valves) by RFO 10. DBR and Testing related to the remaining Safety Related (SR) MOVs (35 valves) is also on schedule and is expected to be completed by RFO 11.
- Significant MOV testing, maintenance and inspections were completed in RFO 9. Maintenance and inspections were conducted on 56 SR MOVs. Diagnostic Testing was completed on 21 SR MOVs.
- Through RFO 9, 46 out of a total population of 90 SR MOVs have been set up via diagnostic testing techniques. Through RFO 9, 29 of 55 Priority I MOVs have been set up via diagnostic testing techniques.
- MOV testing, maintenance, and inspections are scheduled to continue in MCO 10, including the first phase of Dynamic Testing.

ATTACHMENT 2 (Continued)

SCHEDULE B

Progress and Summary of Changes - August 1, 1993 - January 31, 1994

- Design Basis Reviews (DBR), Diagnostic Testing, Inspections, Maintenance and Modifications are on schedule to support the commitment to complete Priority 1 MOVs (55 valves) by RFO 10. Similar efforts related to the remaining Safety Related (SR) MOVs (35 valves) are also on schedule and are expected to be completed per the current commitment, RFO 11.
- The first phase of Dynamic Testing is on schedule to commence in MCO 10. The use of an alternative valve and actuator design is under consideration for implementation on a certain population of MOVs. Candidate MOVs are those which would require significant modifications utilizing typical manufacturer product design and applications. The alternative design has several advantages including a solid-state control system, enhanced repeatability, reduced electrical power demand and a reduced preventative maintenance frequency. The alternate design would also decrease the probability of potential common mode failure issues and diversify plant design.
- Our response to Generic Letter 89-10, Supplement 5. (Reference 18), indicated actions to be taken to resolve the accuracy issues associated with the use of Liberty Technologies VOTES equipment. The following actions were required:
 - Update the VOTES test results using the revised property constants and torque correction factors. This action is complete. Subsequent to this action, Liberty issued Customer Service Bulletin (CSB) 031 that requires review of test results due to a software problem in the VOTES equipment. This new action will be completed and updated by our next LTP submittal.
 - Revise Liberty Technologies test results to use a curve fit algorithm and determine extrapolation error. This action is complete. Subsequent to completion, Liberty issued CSB-031 causing a need to review post test results. This new action will be completed and updated by our next LTP submittal.

Progress and Summary of Changes - February 1, 1994 - July 31, 1994

- Design Basis Reviews (DBR), Diagnostic Testing, Inspections, Maintenance and Modifications are on schedule to support the commitment to complete Priority I MOVs (55 valves) by the end of RFO 10. Similar efforts related to the remaining Safety Related (SR) MOVs (35 valves) are also on schedule and are expected to be completed per the current commitment, RFO 11. The work scope applicable to the Priority I MOVs includes approximately (90) Inspections, (17) Overhauls, (48) Static Diagnostic Tests, (36) Dynamic Diagnostic Tests and (52) Modifications.
- The first phase of Dynamic Testing is on schedule to commence in MCO 10.
- The use of an alternative valve design, as previously discussed, is being aggressively pursued for implementation on (4) MOVs in RFO 10. The use of an alternative actuator design is also being aggressively pursued for implementation on (1) MOV in RFO 10. The alternate design incorporates GL89-10 'lessons learned' as well as the most recent EPRI and INEL technical information. Back-up plans are also being developed should new product qualification issues not support our RFO 10 schedule commitment.

Progress and Summary of Changes - July 31, 1994 - January 31, 1995

- 'Generic Letter 89-10, Safety Related MOV Testing and Surveillance' activities continue on schedule to support the commitment to complete Priority I MOVs (55 valves) by RFO 10, with the remaining Safety Related (SR) MOVs (35 valves) following per the current schedule commitment, RFO 11.
- Significant progress was made during the generator forced outage in the Fall of 1994. The forced outage enveloped the original scheduled MCO 10. A total of forty-nine (49) MOVs

SCHEDULE B

were worked during the Fall outage. Industry corrective actions and GL 89-10 design changes accounted for thirty-six (36) of the forty-nine (49) activities performed. Activities ranged in complexity from complete actuator replacement/valve disassembly to simple changes in gear ratio and EQ inspections.

- Valve modifications were completed on three (3) MOVs for the purpose of installing pressure locking relief paths. Potential over-thrust/over-torque conditions were also dispositioned on two MOVs in the RWCU and RCIC systems.
- The first phase of Dynamic Testing was completed during the Fall outage. Differential pressure diagnostic testing was completed on thirteen (13) MOVs. Static diagnostic testing also continued during this outage with twenty-five (25) MOVs being set using state-of-the-art equipment and industry data.
- The use of an alternative valve design, as previously discussed, is scheduled for implementation on (4) MOVs in RFO 10. The use of an alternative actuator design is also being aggressively pursued for implementation on (1) MOV in RFO 10. The alternate designs incorporate GL 89-10 'lessons learned' as well as the most recent EPRI and INEL technical information. Back-up plans are in place to install a conventional design actuator should delivery of the new actuator not support our RFO 10 schedule commitment. Whichever actuator is installed, committed actions will be completed in RFO10.

Progress and Summary of Changes - February 1, 1995 - July 31, 1995

- The first phase of Generic Letter 89-10, Safety Related (SR) MOV Testing and Surveillance activities (55 Priority I MOVs) was completed on schedule in RFO 10. The remaining Safety Related MOVs (35 valves) will follow per the current schedule commitment, RFO 11.
- Significant progress was made during RFO 10 (Spring 95). A total of sixty eight (68) SR MOVs were worked during the refueling outage. Industry corrective actions and GL89-10 design changes accounted for forty (40) of the sixty eight (68) activities performed. Activities ranged in complexity from complete valve/actuator replacement to simple changes in gear ratio and EQ inspections.
- Valve modifications were completed on five (5) MOVs in RFO 10 for the purpose of installing pressure locking relief paths. This brings the total number of MOV related modifications to eight. No additional MOV modifications related to this issue are expected.
- During RFO10, differential pressure diagnostic testing was completed on thirty five (35) MOVs. Static diagnostic testing also continued during the RFO with forty (40) MOVs being set using state-of-the-art equipment and industry data.
- Design basis operation for eight three percent (83%) of Priority 1 gate and globe motor operated valves has been confirmed via differential pressure diagnostic testing. Static diagnostic testing has been performed on all Priority 1 gate and globe motor operated valves (47).
- The installation of an alternative valve design ("Sentinel"), as discussed in the previous update, was completed on (4) MOVs in RFO 10. Three of the six GL89-10 Supplement 3 MOVs were replaced with the new design. RFO10 test results indicate excellence performance characteristics. The use of an alternative actuator design is also continuing to be aggressively pursued for future implementation. The alternate designs incorporate GL89-10 "lessons learned" as well as the most recent EPRI and INEL technical information and thus represent a truly engineered solution to many outstanding design issues.

SCHEDULE B

SEVERE ACCIDENT MANAGEMENT PROGRAM

(LTP #489)

Commitment Description

By letter dated March 24, 1995, we informed you that Pilgrim Station intends to implement the formal industry position on severe accident management approved by the Nuclear Energy Institute's Nuclear Strategic Issues Advisory Committee on November 21, 1994, from NEI to the Director, Office of Nuclear Regulation states that:

Each licensee will:

- Assess current capabilities to respond to severe accident conditions using Section 5 of NEI 91-04, Revision 1, "Severe Accident Issue Closure Guidelines."
- Implement appropriate improvements identified in the assessment, within the constraints of existing personnel and hardware, on a schedule to be determined by each licensee and communicated to the NRC, but in any event no later than December 31, 1998.

Based on previous interactions between NEI and the NRC, we understand the NRC agrees with the need for licensee flexibility in their methods of assessing and establishing severe accident management guidance. Utilizing the associated implementing guidance (contained in NEI report 91-04, Revision 1), our target date for completion of the assessment of severe accident management capabilities and implementation of any identified enhancements is December 31, 1997.

Commitment History/Progress

Progress and Summary of Changes - February 1, 1995 - July 31, 1995

- Multi-disciplined Task Force and Project Manager assigned to Program.
- Integration with EOP update initiated
- Project goals, objectives, schedules, costs, and task ownership approved.
- Detailed task assignments have been made.
- Continued interaction with the BWROG's Severe Accident Working Group.
- Detailed reviews of governing guidance documents have been initiated.

SCHEDULE BBWR THERMAL-HYDRAULIC INSTABILITIES (GL 94-02) (LTP#504)Commitment Description

The NRC issued this Generic Letter requesting each BWR licensee take appropriate actions to augment its procedures and training for preventing or responding to thermal-hydraulic instabilities in their reactors. Each licensee is to submit a plan describing which long-term stability solution hardware option it has selected and provide a proposed implementation schedule for the necessary modifications.

References

- 1.) Generic Letter 94-02, dated 7/11/94. "Long-Term Solutions and Upgrade of Interim Operating Recommendations for Thermal-Hydraulic Instabilities in Boiling Water Reactors"
- 2.) BECo Response to GL 94-02, dated 9/9/94, BECo Letter No. 94.102.
- 3.) BWR Owners Group Letter, dated 6/6/94, "BWR Owners Group Guidelines for Stability Interim Corrective Action".

Commitment History/Progress

Progress and Summary of Changes - July 31, 1994 to January 31, 1995.

In Reference 2, Boston Edison informed the NRC we would, within design and license constraints, modify procedures and conduct operator training consistent with the guidelines provided in reference 3. These actions will be implemented coincident with startup from RFO #10, currently scheduled to start March 25, 1995.

Also in Reference 2, BECo stated we are presently planning to install the Enhanced Option 1A stability solution at Pilgrim Station by the end of 1997. The proposed milestones for Option 1A were included in reference 2 as follows:

<u>Milestone</u>	<u>Owner</u>	<u>Date</u>
• Submit PNPS specific power/flow map region boundaries to NRC for review and approval	PNPS	3rd Qtr/1995
• NRC approval of submitted region boundaries	NRC	2nd Qtr/1996
• Submit Tech. Spec. changes for Option 1A modifications	PNPS	3rd Qtr/1996
• NRC approval of Tech. Specs.	NRC	3rd Qtr/1997
• Option 1A modifications implemented at PNPS	PNPS	4th Qtr/1997

We also stated we are continuing to monitor the Option 3 progress and would inform the NRC via the LTP Update process if Option 3 became a more viable long-term solution for PNPS.

ATTACHMENT 2 (Continued)

SCHEDULE B

Progress and Summary of Changes - February 1, 1995 - July 31, 1995

The milestones reported on the last LTP are unchanged except the NRC has indicated at a July 10, 1995 BWROG meeting that we do not have to separately submit the PNPS specific power/flow MAP region boundaries to the NRC for review and approval. We can submit the boundaries as part of the technical specification package for the hardware modifications. BECo may separately send these proposed boundaries to the NRC in support of requesting approval for our use if such boundaries offer significant relief from the in-place BWROG interim corrective action guidelines.

SCHEDULE B

RHR/FPC INTERTIE VALVE MODIFICATION, LTP # 568

Commitment Description

Boston Edison requested and obtained code relief on May 18, 1995 from having to inspect RHR/FPC Intertie piping during the 2nd ten year inspection interval ending June 30, 1995 based on excessive radiation exposure. The relief was based upon a BECo commitment to install a 6 inch manual isolation valve during RFO#11 that would isolate this piping from the code inspection boundary, thereby eliminating the inspection requirement (Reference 2).

References

1. BECo Letter # 95-015, dated February 9, 1995
2. NRC Letter dated May 18, 1995

Commitment History/Progress

Progress and Summary of Changes - July 31, 1994 to January 31, 1995

Plant Design Change has been prepared, and is scheduled for implementation during RFO#11

Progress and Summary of Changes - February 1, 1995 to July 31, 1995

In reviewing the ASME Code requirements for the 3rd ISI interval, the 1989 editions of ASME XI deletes the requirement to inspect this particular run of piping, eliminating the need to install the 6" manual isolation valve (no Plant Design Change is required).

The PNPS third ten year inspection interval started on July 1, 1995. The ISI Program has been updated in accordance with the 1989 edition of the ASME code as provided by 10CFR50.55a.

The inspection requirements of the 1989 edition of ASME XI, Category C-F-2 in particular, have changed with respect to Class 2 piping of less than 0.375 inch wall thickness. Previously, a surface examination of circumferential piping welds, visual examination of pipe supports and pressure testing was required. The new code requires only pressure testing which, with the use of Code Case N-498, can be easily performed. The Intertie piping is M-300 Pipe Class HB (6 inch Sch.40) with a wall thickness of 0.280 inches. This means there is no longer a reason to install the 6 inch valve for the purpose of isolating the RHR/FPC Intertie return piping from the Class 2 code inspection boundary. We will submit a revised relief request on this issue.

SCHEDULE BRWCU PIPING REPLACEMENT (LTP #600)Commitment Description

Generic Letter 88-01 was issued to address Intergranular Stress Corrosion Cracking (IGSCC) in stainless steel pipe materials. BECo replaced the recirculation system and IGSCC susceptible material in the drywell. BECo responded to the NRC and committed to comply with Generic Letter 88-01 except for the RWCU system between valves 1201-5 and 1201-80. This response was rejected by the NRC Safety Evaluation of the BECo Generic Letter 88-01 response (NRC Letter 1.90.104, 4/26/90). BECo responded (BECo Letter 2.90.140, 11/15/90) by stating the following for the non-safety portion of the RWCU system: "We will perform an inspection of 10% of these welds during each refueling cycle. If a flaw is discovered in the 10% sample and IGSCC is determined as the probable cause, another 10% will be inspected. If an IGSCC induced flaw is discovered in the second 10% sample, no further inspections will be conducted. The identified flaws will be repaired and plans will be made to replace RWCU non-code piping in subsequent refueling outages."

IGSCC susceptible pipe per Generic Letter 88-10 is non-resistant austenitic stainless steel pipe 4" NPS and greater operating at a temperature greater than 200° F.

During RFO #8 inspections were made of the safety and 10% of the non-safety (non-code) pipe. IGSCC was found. There was a discussion with the NRC at that time and the commitment quoted above was altered. Rather than inspect an additional 10% of the non-safety pipe, the areas of the safety and non-safety pipe that had IGSCC would be replaced and all IGSCC susceptible pipe would be replaced in future outages. This increased the original scope by adding the safety-related RWCU pipe into the replacement commitment. Piping was replaced in the areas where IGSCC was found during RFO #8 by Plant Design Change 91-39.

References

- 1) NRC Generic Letter 88-01
- 2) NRC Letter 90-104, dated April 26, 1990
- 3) BECo Letter 90-140, dated November 15, 1990

Commitment History/Progress

Progress and Summary of Changes - March 1992 to August 15, 1992

- A Plant Design Change has been developed to replace remaining safety related and non-safety related IGSCC susceptible pipe in the RWCU system. Plans are being made to replace the balance of susceptible piping in RFO #9 and MCO #10.

Progress and Summary of Changes - August 15, 1992 to February 15, 1993

- A Plant Design Change was approved and issued for construction to replace the remaining safety related and non-safety related IGSCC susceptible pipe. Replacement of the safety related IGSCC susceptible pipe in the RWCU System Heat Exchanger Room and some of the non-safety related piping is scheduled to take place in RFO #9, with the balance of safety related piping outside the Heat Exchanger Room to be replaced in MCO #10. We are currently reassessing our plans to replace the remaining non-safety related piping. This reassessment is to consider the alternatives presented in Generic Letter 88-01, Supplement 1 relative to replacement/inspection plans.

ATTACHMENT 2 (Continued)

SCHEDULE B

Progress and Summary of Changes - February 15, 1993 to July 31, 1993

- Replacement of a portion of the safety and non-safety related piping with IGSCC resistant material in the RWCU System Heat Exchanger room was completed in RFO #9. The balance of the safety related piping, most of which is outside the heat exchanger room, was planned for MCO #10. The planned duration of MCO #10 has been shortened and provides too small a window for replacement activities. Hence, this work has been deferred to RFO #10 when an adequate replacement window exists. We are also considering the alternatives presented in GL 88-01, Supplement 1, relative to replacement/inspection plans as they relate to the balance of IGSCC susceptible non-safety related piping.

Progress and Summary of Changes - August 1, 1993 - January 31, 1994

- No changes have taken place or are planned.

Progress and Summary of Changes - February 1, 1994 - July 31, 1994

- No changes have taken place or are planned.

Progress and Summary of Changes - August 1, 1995 - January 31, 1995

- Replacement of the major portion of remaining IGSCC susceptible safety related piping in the RWCU system is planned for completion in RFO# 10. A section of this pipe which penetrates the RWCU Heat Exchanger Room floor on the system discharge up to and including the section imbedded in the shield sandbox will not be replaced. Three welds are involved in the section not being replaced. One is a category A and two are category D. The two category D welds will be ISI examined during RFO# 10.
- In RFO# 10 the RWCU System inboard (MO 1201-2) and outboard (MO 1201-5) isolation valves will be replaced with new isolation valves to satisfy activities associated with GL 89-10 on motor operated valves. Based on this action and alternatives presented in GL 88-01, Supplement 1, dated 2/4/92, the balance of Non-Safety Related piping outboard of the second isolation valve will not be replaced.

Progress and Summary of Changes - February 1, 1995 - July 31, 1995

- Replacement of the major portion of IGSCC susceptible safety related piping in the RWCU system was completed in RFO 10. The two Category D welds in the sections not replaced were examined during RFO #10.
- This LTP item is completed and will be removed from future updates.

SCHEDULE B**INTERGRANULAR STRESS CORROSION CRACKING OF THE CORE SHROUD (G.L. 94-03)**
(LTP #669)**Commitment Description**

This Generic Letter requires an Inspection or repair of the Core Shroud no later than the next scheduled Refueling Outage.

During RFO 10 (April 1995) shroud stabilizers will be installed in lieu of an inspection of horizontal welds. These stabilizers will vertically and laterally support and replace the circumferential welds (H-1 through H-10) in the shroud and will be designed to meet the BWR Vessel & Internals Project (BWRVIP) generic repair criteria. Selected vertical welds, ring segment welds and vessel attachment welds will be inspected to ensure structural adequacy.

A detailed plan for installing 4 shroud stabilizers and inspecting selected parts of the shroud was submitted to the NRC on January 16, 1995.

References

- 1) NRC Generic Letter 94-03 dated July 25, 1994, Intergranular Stress Corrosion Cracking of Core Shrouds in BWR's (BEC0 #1.94.152)
- 2) BECo Letter dated August 27, 1994, Response to GL 94-03 Intergranular Stress Corrosion Cracking of Core Shrouds (2.94.090)
- 3) BECo Letter dated January 16, 1995, 2.95.004, Core Shroud Stabilizer Design.
- 4) BECo Letter dated March 21, 1995, 2.95.037, PNPS response to the NRC Staff request for additional information concerning the Pilgrim Core Shroud.
- 5) BECo Letter dated April 14, 1995, 2.95.048, Additional information concerning our planned modification of the Pilgrim Core Shroud.
- 6) BECo Letter dated April 27, 1995, 2.95.056, Response to Request for Additional Information Regarding the Pilgrim Core Shroud Modification.
- 7) BECo Letter dated May 3, 1995, 2.95.060, Commitment letter to provide Inservice inspection plan by November 9, 1995 and information on XM-19 by August 9, 1995.
- 8) NRC Letter dated February 1, 1995, Request for withholding information from Public disclosure.
- 9) NRC Letter dated February 24, 1995, Request for Additional Information.
- 10) NRC Letter dated March 14, 1995, Request for Additional Information (BEC0 Letter 1.95.042).
- 11) NRC Letter dated April 17, 1995 Request for Additional Information (BEC0 Letter 1.95.066).
- 12) NRC Letter May 12, 1995, Safety Evaluation Regarding Pilgrim Nuclear Power Station Core Shroud Repair.
- 13) BECo Letter dated July 24, 1995, 2.95.079, provided additional test data on air cooled XM-19.

SCHEDULE B

Commitment History/Progress

Progress and Summary of Changes - February 1, 1994 - July 31, 1994

We submitted a response to the Generic Letter on August 27, 1994.

Progress and Summary of Changes - August 1, 1994 - January 31, 1995

Installation and inspection plan submitted to NRC, January 16, 1995, BECo Letter # 95.004

Progress and Summary of Changes - February 1, 1995 - July 31, 1995

The Core Shroud stabilizers (4) were installed at PNPS during RFO #10.

In our May 3, 1995 letter (Reference 7) we stated we would submit our reinspection plans in November 1995. These plans will be based on the BWR VIP Guidelines that are now expected to be finalized in June 1996. We will provide a status of the reinspection program in our next LTP update.

SCHEDULE B

SOUTH WEYMOUTH NAVAL AIR STATION

Commitment Description

We committed to include a status of the possible closure of the South Weymouth Naval Air Station and its impact on Emergency Planning for Pilgrim Station in this Long Term Program Report.

The Massachusetts Emergency Preparedness Agency (MEMA) has overall responsibility for Radiological Emergency Response planning in the Commonwealth of Massachusetts.

References

- 1) None

Commitment History/Progress

Progress and Summary of Changes - February 1, 1995 - July 31, 1995

A final decision has not been made regarding the closure of the South Weymouth Naval Air Station. Formal Congressional approval is not expected until December.

We met with the Massachusetts Emergency Management Agency on August 17th to discuss plans should the federal government close the station.

ATTACHMENT 3

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ADDITIONAL ITEMS LIST (SCHEDULE C)*

<u>LTP No.</u>	<u>Title</u>	<u>February 1995 Target Schedule</u>	<u>Current Status</u>
022	Radwaste Betterment	End of 1997	No Change
108	24 Month Technical Specification Project	Electrical setpoint changes will be completed in RFO 10.	Complete
322	Cooling Water Betterment	Ongoing through 1995.	No Change
448	Inspect/Replace Lower Core Support Plate Flow Plugs (GE SIL 359)	Deferred to RFO #11	No Change
479	Replace Embrittled Cables	RFO #10	RFO 10 scope complete. Samples taken for testing and evaluation.
486	Intake Canal Dredging	Phase 1, 1995, (subject to approvals from EPA & Army Corps of Engineers Phase 2, 1996	Phase 1, 1996, (subject to approvals from EPA & Army Corps of Engineers Phase 2, 1997
524	Replace Simplex Panels	1997	1998
528	Radwaste Filter Demin	2nd Quarter 95	System Turned Over for Interim Operations. Outstanding Item Closure 4th Quarter 95

* This list represents a portion of major plant betterments at Pilgrim Station. The total LTP contains additional plant betterments, programs/projects, and issues.

ATTACHMENT 3

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ADDITIONAL ITEMS LIST (SCHEDULE C)*

<u>LTP No.</u>	<u>Title</u>	<u>February 1995 Target Schedule</u>	<u>Current Status</u>
546	Instrument Recirc. Pump Shaft	8/1/95	2/28/96
575	Roof Replacement	N/A	Ongoing - to be completed in 2000
590	Turbine Building Effluent Monitoring	Partially complete. Final completion scheduled for 1995	No Change
591	Maximum Extended Load Line Limit Analysis	RFO #10	Complete
603	Replace Batteries	B-Loop replaced in MCO #10. Completion scheduled for RFO #10	Complete
621	3D Monicore	Phase 1 Complete. Phase 2 by 1st Qtr '96	No Change
646	Gaitronics Mods	End 1995	1996
649	Replace Bleeder Trip Valve	RFO #10	Complete
684	Augmented Offgas System Upgrade	Being Planned. A portion will be done in RFO #10	Substantial upgrade performed in RFO 10. Additional work planned for RFO 11.
687	EPIC Upgrade	N/A	1996 (Simulator 1997)
691	Plant Material Condition Upgrade	NA	Ongoing - to be completed in 2000

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