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LONG TERM PROGRAM: SEMI-ANNUAL REPORT

This letter provides the semi-annual Long Term Program (LTP) update. The update includes a schedule, commitment descriptions, progress since the last update, and a summary of changes. Changes in status since our last submittal are marked by revision bars in the right margins.

Since the last update, we have completed the RHR/FPC Intertie Valve Modification (LTP #568) Schedule B project.

Schedule Revisions include:

- Severe Accident Management Program
- Salt Service Water System Piping (GL 89-13)
- Technical Specification Conversion Project

If you have any questions on the contents of this report, please direct them to Ms. Kristin R. DiCroce of our Regulatory Affairs Department at (508)830-7667.

ETB/KRD/LTP97CVR

Attachment 1: Long-Term Program (LTP) Schedule  
Attachment 2: LTP Schedule B Items  
Attachment 3: LTP Schedule C Items

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**ATTACHMENT 1  
Long-Term Program (LTP) Schedule**

		1996												1997												1998												1999											
Schedule B Commitments	Reference	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
RFO #11 2/15-3/26/97																																																	
RFO #12 April 1998																																																	
Neutron Flux Monitoring																																																	
Seismic Verification Program	GL 87-02																																																
Salt Service Water	GL 89-13																																																
MOV Testing and Surveillance	GL 89-10																																																
Severe Accident Management																																																	
BWR Thermal Hydraulic Instabilities	GL 94-02																																																
RHR/FPC Intertie Valve Modification																																																	
IGSCC of Core Shroud	GL 94-03																																																
South Weymouth Naval Air Station																																																	
ECCS Pump Strainers	Bulletins 95-02 & 96-03																																																
Tech Spec Conversion Project																																																	
Boraflex Degradation in Spent Fuel Pools	GL 96-04																																																
Containment Integrity during Design-Basis Accident Condition	GL 96-06																																																
Testing of Safety-Related Logic Circuits	GL 96-01																																																

**ATTACHMENT 2**  
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### 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.

(BECO IADB RC95.0011)

##### **References**

- 1) NRC Letter dated January 13, 1993 from A. Boyer to C.L. Tilly, BWR Owner's Group
- 2) NRC letter dated August 11, 1993, Reg Guide 1.97, BWR Neutron Flux Monitoring (TAC M77560)
- 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.

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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.

#### 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.

#### Progress and Summary of Changes - August 1, 1995 - January 31, 1996

Boston Edison received the final report from GE of the analysis to determine the ATWS environment for neutron monitoring equipment. The report is based on the Dresden Plant and envelopes Pilgrim and 3 other plants with similar piping configurations.

NEDO-31558 requires a plant-specific evaluation of ATWS environments in comparison with design specifications to assure NMS system performance. Qualification to design basis environmental standards required by RG 1.89 is not necessary.

Several design specifications and vendor Certificates of Compliance have been reviewed. This preliminary review concludes the temperature specifications for the components were higher than ATWS temperatures. We are currently performing a review of the cable connectors. A simple temperature test may be required to assure that these connectors will meet the ATWS environment. Test results are expected to be complete by the end of 1996.

#### Progress and Summary of Changes - February 1, 1996 - July 31, 1996

No progress was made on this issue; however, we expect to complete the review as scheduled.

#### Progress and Summary of Changes - August 1, 1996 - January 31, 1997

All reviews have been completed. The NMS cable connector temperature test was performed on February 14, 1997, and met our acceptance criteria. We are preparing the final documentation package. All activities associated with Neutron Flux Monitoring will be completed 6/30/97.

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### SCHEDULE B

#### **SEISMIC VERIFICATION PROGRAM (GL 87-02) (LTP #410)**

##### **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 9/30/96.

(BECo IADB RL 95.0003)

##### **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.
- 10) BECo Letter 96-068 dated July 12, 1996, Revision of A-46 submittal date.
- 11) BECo Letter 96-085 dated September 30, 1996, Summary Report, Generic Letter 87-02 (USI A-46).

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### 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.

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#### 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.
- Cable 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.



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- 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.

#### Progress and Summary of Changes - August 1, 1995 - January 31, 1996

- Seismic Evaluation Work Sheets (SEWS) are complete.
- Relay qualification assessment essentially complete.
- Assessment of "potential outliers" initiated.
- Development of documentation and final report is progressing and the submittal is planned for June 1996.

#### Progress and Summary of Changes - February 1, 1996 - July 31, 1996

- Requested and received an extension of the final report submittal date from June 1996 to September 1996.
- Outlier assessments are continuing.
- Validations and verification of safe shutdown equipment list (SSEL) pathways on simulator completed. Feedback is being incorporated into the program.
- Operations review of the program is in progress.
- Final report development continues.

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Progress of Summary and Changes - August 1, 1996 - January 31, 1997

- Final report submitted for NRC review in September 1996.
- Outlier disposition work plan developed based upon program findings.
- Walkdowns supporting outlier disposition scheduled for RFO #11.
- Outlier disposition has been prioritized and is proceeding.
- Current planning, which is linked to receipt of an SER in 1997, calls for disposition of known outliers by RFO #12.



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### SCHEDULE B

#### **SALT SERVICE WATER SYSTEM (GL 89-13)** (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. (Complete)
- 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)
- Complete SWOPI Items by the end of RFO #11. (BECo IADB RC 95.0053, SW95.XXXX)

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.

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#### 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.
- 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.

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#### 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.

#### 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.

#### Progress and Summary of Changes - August 1, 1995 - January 31, 1996

We are currently on schedule to complete the SWOPI items by the end of RFO #11.

#### Progress and Summary of Changes - February 1, 1996 - July 31, 1996

Of the original 149 SWSOPI action items, 21 remain open.

All SWSOPI-related action items are scheduled to be completed by the end of RFO #11.

#### Progress and Summary of Changes - August 1, 1996 - January 31, 1997

Ten SWSOPI action items remain open. These items are now scheduled for completion after RFO #11. A final closeout report will be issued before July 31, 1997.

## ATTACHMENT 2

### SCHEDULE B

#### **SAFETY-RELATED MOV TESTING AND SURVEILLANCE (GL 89-10) (LTP #487)**

#### **PRESSURE LOCKING AND THERMAL BINDING OF SAFETY-RELATED, POWER-OPERATED GATE VALVES (GL 95-07)**

#### **PERIODIC VERIFICATION OF DESIGN - BASIS CAPABILITY OF SAFETY-RELATED MOTOR-OPERATED VALVES (GL 96-05)**

#### **Commitment Description**

Generic Letter 89-10 (Ref. 1) expands the scope of the motor operated valve program required by NRC Bulletin 85-03 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 BWRO 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.

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

(BEC0 IADB RL95.005)

#### 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
- 21) Generic Letter 95-07, "Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves (BEC0 #1.95.131)
- 22) BECo Letter 95.108, dated October 16, 1995, 60-Day Response to Generic Letter 95-07
- 23) BECo Letter 96.013, dated February 23, 1996, 180-Day Response to Generic Letter 95-07
- 24) NRC Generic Letter 96-05, Periodic Verification of Design - Basis Capability of Safety - Related Motor - Operated Valves, 9/18/96.
- 25) BECo Letter 96-099, 11/15/96, Response to GL 96-05.

#### 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).



## ATTACHMENT 2

### SCHEDULE B

- 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.

#### 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.

## ATTACHMENT 2

### SCHEDULE B

- 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.

#### 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 I 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.



## ATTACHMENT 2

### SCHEDULE B

#### 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 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).

## ATTACHMENT 2

### SCHEDULE B

- 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 excellent 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.

#### Progress and Summary of Changes - August 1, 1995 - January 31, 1996

The scope of work associated with RFO #11 will be similar in nature and in quantity to that accomplished in RFO #10 (summarized in the previous update). Certain Priority I MOV's will again be worked for the purpose of accomplishing standard preventative maintenance, disposition of emergent generic industry issues, or to inspect for potential degradation for trending or corrective maintenance. The strategy is to complete as much of the scope on line within the scheduled system windows as possible. This strategy optimizes resources and considers ALARA.

The issue of "Pressure Locking and Thermal Binding..." with respect to MOVs is essentially complete. Twelve (12) MOVs have been determined to be susceptible to pressure locking and three (3) MOVs have been determined to be susceptible to thermal binding. Physical modifications are complete on eleven (11), procedure changes are planned on four (4), with the remainder being dispositioned via engineering evaluation as not susceptible. Specific details are available in our 180-day response to GL 95-07. (Reference 23)

#### Progress and Summary of Changes - February 1, 1995 - July 31, 1996

The remaining Safety Related MOVs (35 valves) are on schedule to complete per the current commitment, RFO #11.

BECO is also pursuing a permanently installed MOV monitoring system. It is designed to be a non-intrusive device capable of automatically acquiring critical valve performance parameters. It will record and store the valve data onto a removable cartridge for future analysis. The system provides a method of trending valve performance to address periodic test verification requirements.

The installation of an alternative valve design ("Sentinel"), was completed on (4) MOVs in RFO #10. Three of six GL 89-10 Supplement 3 MOVs were replaced with the new design. RFO #10 test results indicate excellent performance characteristics. Confirmatory flow and thermal effects testing was conducted by OEM (General Electric) in May 1996. The testing identified conditions which are not specifically or conservatively addressed in GL 95-07 (Pressure locking and Thermal Binding of Safety - Related Power - Operated Gate Valves"). This issue was identified in our response to RAI TAC No. M93504 and will be followed/dispositioned under GL 95-07.

#### Progress and Summary of Changes - August 1, 1996 - January 31, 1997

There are no significant changes to the commitments identified or referenced above.

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) are on schedule to complete per the current commitment, RFO #11 (February 97).

## ATTACHMENT 2

### SCHEDULE B

The scope of work associated with RFO #11 will be similar in nature and in quantity to that accomplished in RFO #10. Approximately fifty (50) safety-related MOVs make up the RFO #11 scope. Certain Priority I MOVs will again be worked for the purpose of accomplishing standard preventive maintenance, trending, disposition of emergent generic industry issues, or to inspect for potential degradation and perform the associated corrective maintenance.

Approximately thirty safety-related MOVs were completed on-line within the scheduled system windows. This strategy increases design margin at the earliest possible time and optimizes resources / ALARA considerations.

Pilgrim also intends to install and test the 'Sentry' on-line monitoring system on approximately eight (8) MOVs in RFO #11. This system has the capability to record and store diagnostic data which can be used to analyze the MOVs performance over time. Pilgrim intends to utilize this system as one of the elements of the Periodic Verification Program (GL 96-05). BECo Letter 96-099, dated November 15, 1996, provides our current commitment relative to periodic verification to be established by September 30, 1997.

## ATTACHMENT 2

### SCHEDULE B

#### **SEVERE ACCIDENT MANAGEMENT PROGRAM (LTP #489)**

##### **Commitment Description**

By letter dated March 24, 1995, we informed the NRC 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.

Although product development activities are progressing well, impacts on our schedule will be experienced shortly due to RFO #11 and the NRC requalification license examination in the Fall of 1997. We expect all products to be completed, except for Operator Training and final validation and verification, by December 1997. As such, we will complete full implementation by June 1998.

(BEC0 IADB RC 96.0001)

##### **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.

###### **Progress and Summary of Changes - August 1, 1995 - January 31, 1996**

- Vendor selected to complement in-house resources.
- Continued interaction with the BWROG's Severe Accident Working Group.
- Data collection to support calculations initiated.
- The following tasks have been initiated:
  - develop Plant Specific Technical Guidelines and Plant Specific Severe Accident Guidelines
  - evaluate Emergency Response Organization
  - verify technical guidelines
  - formulation of design decisions

## ATTACHMENT 2

### SCHEDULE B

#### Progress and Summary of Changes - February 1, 1996 - July 31, 1996

- Continued interaction with BWROG's Severe Accident Working Group.
- Work is continuing in the following areas:
  - Plant specific technical guidelines/plant specific severe accident guidelines.
  - Evaluation of the Emergency Response Organization.
  - Verification of technical guidelines and formulation of design decisions.
- Full task force review and approval of interim products is progressing.

#### Progress and Summary of Changes - August 1, 1996 - January 31, 1997

- Continued interactions with the BWROG's Severe Accident Working Group and the Nuclear Energy Institute (NEI) to follow emergent activities affecting program completion.
- Work is continuing in the following areas:
  - Development of proposed EOP revisions (including flow charts).
  - Preparation for revised EOP validation program.
  - Revision of EOP satellite procedures.
  - Existing EOP training provided to project task force.
  - Development of Pilgrim Station Severe Accident Management Guidelines (flow charts).
  - Revising portions of the Pilgrim Station Emergency Plan and implementing procedures.
  - Assessing the integration of the EOPs and Severe Accident Management Guidelines with the Emergency Response Organization.



## ATTACHMENT 2

### SCHEDULE B

#### **BWR 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.

Boston Edison implemented the Stability Guidelines (Reference 3) coincident with startup from RFO #10. Boston Edison will install Enhanced Option 1A as its long-term stability solution. Milestones are:

- Submit for NRC approval an evaluation demonstrating that the existing Technical Specifications encompass Option 1A modifications (No Technical Specification amendment required) October 30, 1996
- Option 1A modifications implemented at PNPS 4th Qtr/1997

(BECO IADB RL 95.0016)

##### **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".
- 4.) BECO Letter 96-094, dated 11/7/96, "Power-Flow Stability Technical Specifications Related to Pilgrim's Installation of BWROG Enhanced Option 1A".

##### **Commitment History/Progress**

Progress and Summary of Changes - July 31, 1994 - 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.

## ATTACHMENT 2

### SCHEDULE B

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.

#### 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.

#### Progress and Summary of Changes - August 1, 1995 - January 31, 1996

The design of hardware and software modifications is in progress. The project is on schedule.

#### Progress and Summary of Changes - February 1, 1996 to July 31, 1996

BECo continues working with the BWROG and NRC in resolving final comments on the NRC safety evaluation of the BWR thermal - hydraulic instability. BECo will provide an evaluation demonstrating PNPS does not need a Technical Specification change to address stability issues.

#### Progress and Summary of Changes - August 1, 1996 - January 1, 1997

On November 7, 1996, Boston Edison submitted (Ref. 4) to the NRC its review of the BWROG proposed standard Technical Specifications for Enhanced Option 1A vis-a-vis Pilgrim's Technical Specifications and concluded our current Technical Specifications and administrative controls address this modification with minimal changes being required. These changes will be part of the conversion to Standard Technical Specifications. We continue to work to a December 31, 1997, completion date for full implementation of the Enhanced Option 1A modification.



## ATTACHMENT 2

### 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).

(BECo IADB RC 95.0060.03)

##### **References**

1. BECo Letter # 95-015, dated February 9, 1995
2. NRC Letter dated May 18, 1995
3. BECo Letter 96.022, dated March 5, 1996
4. BECo Letter 96.054, dated May 30, 1996
5. BECo Letter 96.060, dated June 27, 1996
6. NRC Letter, dated September 27, 1996

##### **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 - 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.

ATTACHMENT 2

SCHEDULE B

Progress and Summary of Changes - August 1, 1995 - January 31, 1996

The revised relief request will be submitted by March 31, 1996.

Progress and Summary of Changes - February 1, 1996 to July 31, 1996

The relief request was submitted. (Reference BECo Ltr. 96.054, dated May 30, 1996).

Progress and Summary of Changes - August 1, 1996 - January 1, 1997

The NRC approved the relief request (Reference 6, NRC Letter TAC No. 94978, dated September 27, 1996). This item is now closed and will be removed from future LTP updates.

## ATTACHMENT 2

### SCHEDULE B

#### INTERGRANULAR STRESS CORROSION CRACKING OF THE CORE SHROUD (GL 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/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.

(BEC0 IADB RL 95.0012)

##### 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) BEC0 Letter dated August 27, 1994, Response to GL 94-03 Intergranular Stress Corrosion Cracking of Core Shrouds (2.94.090)
- 3) BEC0 Letter dated January 16, 1995, 2.95.004, Core Shroud Stabilizer Design.
- 4) BEC0 Letter dated March 21, 1995, 2.95.037, PNPS response to the NRC Staff request for additional information concerning the Pilgrim Core Shroud.
- 5) BEC0 Letter dated April 14, 1995, 2.95.048, Additional information concerning our planned modification of the Pilgrim Core Shroud.
- 6) BEC0 Letter dated April 27, 1995, 2.95.056, Response to Request for Additional Information Regarding the Pilgrim Core Shroud Modification.
- 7) BEC0 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) BEC0 Letter dated July 24, 1995, 2.95.079, provided additional test data on air cooled XM-19.

## ATTACHMENT 2

### SCHEDULE B

#### References (continued)

- 14) BECo Letter dated July 29, 1996, 2.96.071.
- 15) BECo Letter dated October 30, 1996, 2.96.091

#### 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.

Progress and Summary of Changes - August 1, 1995 - January 31, 1996

Inspection plans for the core shroud and stabilizer hardware will be in compliance with the BWRVIP Guidelines. These guidelines are currently expected to be finalized by June 1996. We will include these inspection plans as part of our standard refueling outage inspection plan submittal. This plan will be submitted six months prior to the start of the refueling outage.

Progress and Summary of Changes - February 1, 1996 - July 31, 1996

The BWRVIP submitted the Core Shroud Reinspection Guidelines to the NRC in March 1996. The NRC has issued request for additional information questioning a number of issues including bolt torque, inspection of threaded fasteners, and load bearing welds. Our inspection plan will be finalized and submitted to the NRC when these issues are resolved. It is our intention that our inspection plan will follow the BWRVIP guideline (Reference 14, BECo Letter to NRC dated July 29, 1996, 2.96.071).

Progress and Summary of Changes - August 1, 1996 - January 31, 1997

BECo submitted the Core Shroud Reinspection plan as part of RFO #11 Inservice Inspection Plan (Reference BECo Letter dated October 30, 1996, 2.96.091). The core shroud will be inspected during RFO #11 in accordance with the BWR VIP-07 guidelines for shrouds that have completed repairs.

## ATTACHMENT 2

### SCHEDULE B

#### **SOUTH WEYMOUTH NAVAL AIR STATION (LTP #645)**

##### **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.

(BEC0 IADB RC 95.0059)

##### **References**

- 1) Boston Edison letter dated September 30, 1995 (2.95.098)

##### **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.

Progress and Summary of Changes - August 1, 1995 - January 31, 1996

The South Weymouth Naval Air Station is expected to be officially closed as a naval air base in September 1997. It is our understanding the base will be turned over to the local communities at that time.

Approximately 100 emergency personnel are required to staff the South Weymouth reception center. During 1994 and 1995, approximately 135 Navy, civilian, and local volunteer personnel were trained and assigned to the reception center.

Some emergency personnel are expected to be transferred out of the area when the base closes. Additional emergency personnel from the surrounding local towns were recruited in October 1995. Approximately 100 additional personnel were identified as emergency volunteers.

On November 17, 1995, and February 7, 1996, classroom training was held for both new and existing personnel. On February 24, 1996, a training practical at the reception center will be conducted.

Progress and Summary of Changes - February 1, 1996 - July 31, 1996

The South Weymouth Naval Air Station is not expected to close until September 27, 1997. It is expected that the buildings and grounds will be turned over to local communities at that time. All Navy aircraft are expected to move out of the facility on August 27, 1996.

## ATTACHMENT 2

### SCHEDULE B

During the month of February 1996, approximately 130 people from the surrounding communities were trained to staff the reception center. MEMA Area II and emergency management agencies from the surrounding communities continue to recruit volunteers to maintain proper staffing levels for the reception center. They are also seeking alternative locations in case the reception center in South Weymouth cannot be maintained.

#### Progress and Summary of Changes - August 1, 1996 - January 31, 1997

The South Weymouth Naval Air Station remains scheduled for removal of naval personnel in September 1997, with ongoing movement of personnel and securing of facilities. Staffing of the reception center remains virtually unaffected due to the closure, since reception center functions are assigned to and performed by trained volunteers from the surrounding communities. We have recently been requested to relocate the reception center equipment from the existing gym and chapel areas by June 1, 1997, in order to facilitate temporary closure of these facilities. MEMA Area II, assisted by Boston Edison staff, is seeking alternative locations in case the reception center at South Weymouth cannot be maintained. Additionally, we have been in contact with the NAS Reuse Planning Committee and are exploring the use of subleases for the existing facilities, or alternate NAS facilities, in order to establish interim and continued use of the base as a northern reception center.



## ATTACHMENT 2

### SCHEDULE B

#### **ECCS PUMP STRAINERS (Bulletin 95-02) , (Bulletin 96-03) (LTP #723)**

##### Commitment Description:

Pilgrim has performed testing for the purpose of confirming suppression pool and strainer cleanliness. The testing confirmed strainer cleanliness, and the results were transmitted to the NRC (Reference 3). Pilgrim will inspect the ECCS suction strainers in RFO #11 and will also continue with pool cleaning in that outage. Future pool cleaning frequency will be based on a plan consistent with generic studies currently on going via the BWROG. Pilgrim completed foreign material exclusion (FME) procedure enhancements on February 8, 1996.

Bulletin 96-03 requested that appropriate procedural measures and plant modification to minimize the potential for clogging of ECCS suppression pool suction strainers by debris generated during a LOCA. BECo plans to install new ECCS suction strainers that will increase the design margin relative to the existing design basis.

(BEC0 IADB RL 95.0033)

##### **References:**

1. NRC Bulletin 95-02, "Unexpected Clogging of a Residual Heat Removal (RHR) Pump Strainer While Operating in Suppression Pool Cool Mode", dated 10/17/95 (BEC0 Letter 1.95.165)
2. BECo Response dated 11/16/95 (BEC0 Letter 2.95.118)
3. BECo 120-Day Response dated 2/13/96 (BEC0 Letter 2.96.007)
4. NRC Bulletin 96-03, "Potential Plugging of Emergency Core Cooling Suction Strainers by Debris in Boiling Water Reactors", 5/6/96 (BEC0 Letter 1.96.078)
5. NRC Regulatory Guide 1.82, Rev. 2: Water Sources for Long-Term Recirculation Cooling Following a Loss of Coolant Accident, dated May 1996 (BEC0 Letter 1.96.086)
6. BECo. Letter 96-092, 11/1/96, Pilgrim's 180 Day Response to NRC Bulletin 96-03.
7. BECo. Letter 97-012, 2/7/97, Additional information regarding pump suction strainer installation at Pilgrim Station.

##### **Commitment History/Progress:**

Progress and Summary of Changes - August 1, 1995 - January 31, 1996

Pilgrim has conducted a review of ECCS capability and has determined that the ECCS systems are operable, the strainers are not clogged or degraded, and the suppression pool is free of debris that is or can become suspended and result in strainer clogging. This conclusion is based on previous pool cleaning activities and inspections and verified by representative pump performance testing.



## ATTACHMENT 2

### SCHEDULE B

Foreign material exclusion (FME) procedures are in place that should prevent the introduction of material with the potential to compromise ECCS capability. Further enhancements to drywell cleanliness practices are planned to reduce the potential for foreign material entering the torus. Trending in terms of water cleanliness and pump suction pressures are in place and will continue in order to monitor water quality with respect to this issue. Suppression pool cleaning is scheduled

for RFO #11. This and subsequent cleaning/inspection are intended to be consistent with BWROG guidance with respect to items such as sludge generation rate and cleanliness criteria. Pilgrim is active in the BWROG committee and intends to participate aggressively in the development of the Utility Resolution Guide (URG) currently being developed by the owners group.

#### Progress and Summary of Changes - February 1, 1996 - July 31, 1996

Plans are being developed for the purpose of increasing design margin consistent with the Bulletin and Regulatory Guide identified above. Resources are being applied to the design and procurement of extended surface area passive strainers and the review of options related to minimizing material transport post LOCA. Pilgrim is active in the BWROG committee and intends to participate aggressively in the development of the Utility Resolution Guide (URG) currently being developed by the owners group. Based on the Bulletin/Regulatory Guide and the URG, Pilgrim will make modifications to increase design margin at the earliest possible scheduled outage of sufficient duration to implement the respective modification. Based on the analytical and test data currently available, Pilgrim's licensing basis, and the BWROG preliminary recommendations, we would expect to install extended surface area passive strainers in RFO #11. In addition, we are evaluating the potential of modifying susceptible insulation. Our required 180 day response to the Bulletin/Regulatory Guide will provide specific detail.

#### Progress and Summary of Changes - August 1, 1996 - January 31, 1997

There are no significant changes to the commitments identified or referenced above.

Pilgrim continues to move forward with the design and installation of passive, extended surface area ECCS suction strainers in RFO #11 (February 1997). The installation of the new strainers will increase design margin relative to the existing licensing basis. The new strainers will be installed per our design change process under 10CFR50.59 since the modification represents a design change improvement within our current licensing basis.

This modification may represent Pilgrim Station's final resolution of Bulletin 96-03. This determination will be made when the NRC formally approves either the BWROG Utility Resolution Guide (URG) or the Pilgrim specific design criteria. BECo Letter 97-012, dated February 7, 1997, also communicates this intent.

Pilgrim's request for schedule extension, BECo Letter 96-092, remains in place primarily due to the lack of approved generic design criteria relative to Bulletin 96-03 and the uncertainties relative to installation of the strainers in the suppression pool during RFO #11. NRC response to this request has not been received.

## ATTACHMENT 2

### SCHEDULE B

#### TECHNICAL SPECIFICATION CONVERSION PROJECT (LTP #706)

##### Commitment Description

We committed to convert the current customized Pilgrim Station Technical Specifications to the NUREG-1433 "Standard Technical Specifications, General Electric Plants BWR/4", also known as Improved Standard Technical Specifications (ITS). This conversion is contingent upon agreement with the NRC that ITS requirements deleterious to Pilgrim Station and are outside the current license basis will not be incorporated in the converted Technical Specifications. This project, to the extent practical, will incorporate approved revisions to NUREG-1433.

The conversion project is expected to be complete and submitted to the NRC in the third quarter 1998.

(BEC0 IADB RC 96.0052)

##### References

1. NUREG-1433 "Standard Technical Specifications, General Electric Plants BWR/4"

##### Commitment History/Progress

Progress and Summary of Changes - February 1, 1996 - July 31, 1996

The project team is being assembled and will consist of representatives from Operations, Operations Support, Regulatory Affairs, Engineering, and Training. It is expected that an administrative Technical Specification amendment request will be submitted in early 1997. This request will convert sections 4, 5, and 6 to the standard format and content. The second and final submittal is scheduled for third quarter 1998.

Progress and Summary of Changes - August 1, 1996 - January 1, 1997

The project team has been assembled and consists of representatives from Operations, Operations Support, Regulatory Affairs, Engineering and Training. It is expected that an administrative Technical Specification Amendment request will be submitted early in the second quarter of 1997. This request will convert sections 4, 5, and 6 to the standard format and content. The second and final submittal is scheduled for first quarter 1998.

## ATTACHMENT 2

### SCHEDULE B

#### **BORAFLEX DEGRADATION IN SPENT FUEL POOLS (GL 96-04) (LTP #707)**

##### **Commitment Description**

Generic Letter 96-04 (Reference 1, NRC Letter dated June 26, 1996, 1.96.107) required utilities / licensees using Boraflex as a neutron absorber in spent fuel storage racks to provide a response within 120 days that: (1) assesses the capability of the Boraflex to maintain a 5-percent subcriticality margin, and (2) submits to the NRC a plan describing its proposed actions to provide assurance that the 5% subcriticality margin continues to be maintained in the future.

Boston Edison requested an extension to December 18, 1996 (Reference 2, BECo Letter dated September 2, 1996, 2.96.107) to allow blackness testing to be conducted and an assessment of the test results.

In Reference 3, Boston Edison committed to the following:

- Pertinent Boraflex analysis information concerning the >5% subcriticality margin will be incorporated into the FSAR.
- Another blackness test of selected Boraflex cell panels will be conducted in 1998.
- The post-1998 schedule for direct material surveillance will be determined using the 1996 and 1998 blackness testing data and will consider spent fuel pool silica data.

(BECo IADB RC 96.0031)

##### **References**

1. NRC Letter dated June 26, 1996, 1.96.107, Generic Letter 96-04, "Boraflex Degradation in Spent Fuel Pools".
2. BECo Letter dated September 23, 1996, 2.96.084, Request for Extension.
3. BECo Letter dated December 18, 1996, 2.96.107, Response to letter GL 96-04.

##### **Commitment History/Progress**

Progress and Summary of Changes - August 1, 1996 - January 1, 1997

Boston Edison performed a blackness test of the Boraflex material in its spent fuel pool racks; expected shrinkage of the Boraflex was observed. Re-analysis of the spent fuel pool subcriticality was also performed assuming degradation of the Boraflex that far exceeded the level observed in the most recent tests; the analyses confirmed Pilgrim's margin to criticality is greater than the minimum required of 5%.

## ATTACHMENT 2

### SCHEDULE B

#### **ASSURANCE OF EQUIPMENT OPERABILITY AND INTEGRITY DURING DESIGN-BASIS ACCIDENT CONDITIONS (GL 96-06)**

##### **Commitment Description**

Generic Letter 96-06 (Reference 1, NRC Letter dated September 30, 1996, 1.96.143) requested licensees to determine the susceptibility of their facility containment air cooler water systems to either waterhammer or two-phase flow conditions during postulated accident conditions, determine the susceptibility of piping systems that penetrate the containment to thermal expansion of fluid and over pressurization, and assess the operability of affected systems and take corrective action, as appropriate, to satisfy system design and operability requirements. Licensees were requested to submit a written report within 120 days of the GL issuance.

Boston Edison responded to Generic Letter 96-06 in Reference 2, BECo Letter 97-06, dated January 28, 1997.

The reactor building closed cooling water (RBCCW) system loop B provides the cooling water for the containment air coolers. The containment air coolers at Pilgrim Station do not perform any active safety-related function in response to any postulated design basis accidents. An evaluation of the RBCCW system inside containment subject to heating during design basis loss-of-coolant accidents was conducted and concluded the system is not susceptible to waterhammer or two-phase flow. The system is operable and corrective actions are not required.

A review of drywell penetration piping was performed to determine the susceptibility of each line to thermal expansion of fluid such that thermal pressurization of the line could occur. As a result, Boston Edison committed to the following:

- Add PSV-4033 to the IST program and test or replace with a new relief valve during RFO #11.
- Open Valves 1400-64A and 1400-63A during RFO #11 to prevent build-up of pressure in the line.
- Add a pressure relieving device to the drywell floor and to the drywell equipment sumps discharge lines ensuring pressure build-up due to fluid thermal expansion is limited.

(BECo IABD RC 97.000)

##### **References**

1. NRC Letter dated September 30, 1996, 1.96.143, Generic Letter 96-06, "Assurance of Equipment Operability and Containment Integrity During Design-Basis Accident Condition."
2. BECo Letter dated January 28, 1997, 2.97.006, "120-Day Response to Generic Letter 96-06."

ATTACHMENT 2

SCHEDULE B

**Commitment History/Progress**

Progress and Summary of Changes - August 1, 1996 - January 31, 1997.

The committed actions are scheduled for implementation during RFO #11.



## ATTACHMENT 2

### SCHEDULE B

#### **TESTING OF SAFETY-RELATED LOGIC CIRCUITS (GL 96-01)**

##### **Commitment Description**

Generic Letter (GL) 96-01 alerted licensees of potential problems in Logic System Functional Testing (LSFT) activities. Pilgrim conducted a review of past and present activities and practices associated with LSFT.

Boston Edison responded to Generic Letter 96-01 in Reference 2, BECo Letter 96-37, dated April 19, 1996.

Boston Edison committed to the following:

- Pilgrim will re-review two LSFT systems in response to GL 96-01. The re-review results will determine the need to review other LSFT systems. Actions associated with GL 96-01 will be completed before startup from the next refueling outage (RFO #11).
- A letter to the NRC confirming completion of these actions will be submitted 30 days after completion.

(BECo IADB RC 96.0004)

##### **References**

1. NRC Letter 96-07 dated January 10, 1996, Generic Letter 96-01, "Testing of Safety-Related Logic Results."
2. BECo Letter 96-37 dated April 19, 1996, "Response to GL 96-01."

##### **Commitment History/Progress**

Progress and Summary of Changes - August 1, 1996 - January 31, 1997.

The re-review of the two LSFT systems, Core Spray and Automatic Depressurization Systems, is complete. The confirmation letter documenting the completion of GL 96-01 actions will be submitted to the NRC by March 8, 1997.

# ATTACHMENT 3

## Page 1 of 3 LTP SCHEDULE C ITEMS\*

<u>LTP No.</u>	<u>Title</u>	<u>February 1997 Target Schedule</u>	<u>Comments</u>	<u>Cog. Engineer</u>
022	Radwaste Betterment	1997	This item is complete.	<u>Brennion</u>
108	Setpoint Calculation Project	1998	No Change	<u>Almeida</u>
448	Inspect/Replace Lower Core Support Plate Flow Plugs (GE SIL 359)	RFO #11 (Feb.-Mar. 1997)	On-Schedule	<u>White</u>
486	Intake Canal Dredging	Phase 1: 1997 (subject to approvals from EPA & Army Corps of Engineers) Phase 2: 1998	Permits pending; extent of dredging in Summer 1997 TBD.	<u>Manning</u>
524	Replace Simplex Panels	1998	Revising SJA to make adequate spares available.	<u>MacKinnon</u>
528	Radwaste Filter Demin	1996	This item is complete. Final turnover once testing is complete.	<u>Brennion</u>
546	Instrument Recirc. Pump Shaft	RFO #11	Hardware complete RFO #11. Software schedule TBD.	<u>Chan</u>
590	Turbine Building Effluent Monitoring	RFO #11	Construction complete. Chemistry procedures complete. Training to be complete during RFO #11.	<u>Fountain</u>
621	3D Monicore - Simulator Upgrade	1997	No Change	<u>Minott</u>
628	Emergency Preparedness Facility Upgrade	1998	On- Schedule	<u>Spangler</u>

\* 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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LTP SCHEDULE C ITEMS\*

<u>LTP No.</u>	<u>Title</u>	<u>February 1997 Target Schedule</u>	<u>Comments</u>	<u>Cog. Engineer</u>
646	Gaitronics Mods	1998	1996 - completed security radio console upgrade. 1997 - Completed wireless communication system upgrade. Modification schedule to Gaitronics TBD.	<i>Breimion</i>
684	Augmented Offgas System Upgrade	RFO #11	Upgrade to be completed during RFO #11.	<i>Olsen</i>
686	Demin Water System Equipment Removal	1996	This item is complete.	<i>Jackimowicz</i>
687	EPIC Upgrade	1997	New system is in preliminary testing and will be tested/run in parallel with the existing plant process computer system following RFO #11. Expected completion is June 1997.	<i>Minott</i>
689	Simulator Core Model Upgrade	1998	No Change	<i>Pasquale</i>
690	Electronic Imaging	1999	System is in acceptance testing and validation for the distribution of plant procedures. It is expected to be expanded on a continuing basis to include other documents.	<i>Levey</i>

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# ATTACHMENT 3

## Page 3 of 3 LTP SCHEDULE C ITEMS\*

<u>LTP No.</u>	<u>Title</u>	<u>February 1997 Target Schedule</u>	<u>Comments</u>	<u>Cog. Engineer</u>
691	Plant Material Condition Upgrade	Ongoing - to be completed in 2000	1996 scope of work is complete. Project to continue through 1997 with limited scope.	<i>Brennion</i>
700	Personnel Contamination Monitor Upgrade	1998	Six portal monitors purchased and installed in 1996. This item is complete.  Four additional portal monitors to be purchased and installed in 1998.	<i>Drooff</i>  <i>Drooff</i>
722	Chemical Decontamination Project	RFO #11	On- Schedule	<i>Wedgeworth</i>

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