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MANAGER
NUCLEAR OPERATIONS SUPPORT DEPARTMENT

November 5, 1980

BECO. Ltr. #80-279

Mr. Boyce H. Grier, Director
Office of Inspection and Enforcement
Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA. 19406

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

180 Day Response to IE Bulletin 80-11

- References: (1) NRC I&E Bulletin 80-11, "Masonry Wall Design", May 8, 1980
- (2) Boston Edison Company Letter #80-146, "Response to IE Bulletin 80-11", July 14, 1980

Dear Sir:

In a letter dated May 8, 1980, the NRC transmitted I&E Bulletin 80-11 entitled "Masonry Wall Design" to all power reactor facilities with operating licenses. A written response to various questions is required within 60 and 180 days after the date of issuance. Boston Edison Company (BECO.) responded to the 60 day questions in July (Reference 2) as completely as was possible and provided estimated dates for submittal of the unanswered portions due to the unusually large number of walls at Pilgrim Station. We are able to provide an update to the wall re-evaluation schedule at this time but as BECO. indicated to the NRC in our 60 day response, we will be unable to supply the final report on the re-evaluation results as requested within the 180 day reporting period. Following is an update to the (Reference 1) 60 day question numbers 1, 2a, and 3. A brief description of our plans and progress towards completing the 180 day requirements are summarized at the end of this response.

60 Day Response Update

1. Identify all masonry walls which are in proximity to or have attachments from safety-related piping or equipment such that wall failure could affect a safety-related system. Describe the systems and equipment, both safety and non-safety related, associated with these masonry walls.

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All masonry walls in Pilgrim Station have been identified, marked on drawings as to their location, and surveyed as of November 1, 1980. This indicates a slip in our Reference 2 survey completion date of mid-October, 1980 which is due to increased scope and difficulty in the identification of some attachments. Some walls, particularly in the Radwaste Building, have been documented and verified as non-safety related to date. This activity however, does not reduce the number of walls BECo. anticipates requiring re-evaluation (200 to 250) since preliminary investigation earlier this year indicated this to be a possibility and was thus included in the estimates.

No additional safety related pipe supports have been found attached to masonry walls since our previous response. An engineering analysis was conducted under the IE Bulletin 79-14 work which assumed loss of these supports. The results showed no system inoperability problems. As the engineering re-evaluation of the walls proceeds, priority will be placed on verifying the adequacy of these walls as soon as is practical.

As the survey results are made available to the engineering staff the process of identifying the mechanical and electrical systems attached to and surrounding the walls is begun. The electrical portion is particularly time consuming since it involves checking all cables in each conduit and verifying the safety related status of the end devices. We have as many people as is feasible proceeding with this identification phase but progress is slow. The drawings are being sequenced through the systems and electrical engineers in the order established for the re-evaluation. The walls have been divided into four groups based on the plant location, type of attachments, and wall function. It is anticipated the final results of the systems identification for Group 1 will be available for submittal to the NRC in the beginning of December 1980. This will include accessible portions of the Reactor Building, Diesel Generator Bay, Control Room, and Cable Spreading Room. The exact number of walls requiring re-evaluation in these areas will be determined upon completion of the systems review. The actual evaluation, however, is scheduled to begin by mid-November now that the services of Earthquake Engineering Systems, Inc. have been procured.

- 2a. Establish a prioritized program for the re-evaluation of the masonry walls. Provide a description of the program and a detailed schedule for the completion of the re-evaluation for the categories in the program.

The walls at Pilgrim Station have been divided into four categories as mentioned above. The exact breakdown by wall number will be available to the NRC by December 1980. Further input from the system identification phase of the work is required before such a fine breakdown can be established. The basic definition of the groups is intended to be as follows:

Group 1 - Accessible areas of the Reactor Building, Diesel Generator Bay, Control Room, Cable Spreading Room.

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- Group 2 - Turbine Building, Auxiliary Building, Intake Structure.
- Group 3 - RHR Quadrants, Torus Compartment, HPCI Quadrant, TIP Room, RHR Valve Rooms.
- Group 4 - Reactor Building elevation 51' Heat Exchanger and Pump Rooms A and B, Turbine Building Operating Floor, Reactor Building Containment Exch. Air Filters.

Groups 3 and 4 are based on accessibility during plant operation and the existence of masonry shear walls which we anticipate will require more in-depth analysis. The analysis of each group will begin as soon as the system's review is completed and not necessarily upon completion of the analysis of a previous group. BECo. is doing everything possible to support a timely completion of the re-evaluation work but feels that the large work scope at Pilgrim Station requires more than 180 days to accomplish in a manner which adequately addresses all of the NRC's concerns about the adequacy of the masonry walls. Our best estimate for completion of the re-evaluation phase, not including any required modifications, is August 1981. We will be able to provide refined estimates as the analysis proceeds during the next couple of months.

3. Describe in detail the actions planned and their schedule to justify the re-evaluation criteria used in Item 2. If a test program is necessary, provide a commitment for such a program and a schedule for submittal of a description of the test program and a schedule for completion of the program.

A generic re-evaluation criteria has been developed for the walls at Pilgrim Station. The justification for the criteria is based on an extensive survey of several codes and standards applicable to the subject and the appropriate literature concerned with research and experience in masonry construction. We believe that the existing data base is sufficient to substantiate any existing codes and standards with certain adjustments being made for nuclear plant applications. A more complete justification will be provided with the final re-evaluation report to the NRC.

180 Day Response Status

Boston Edison will provide a final report upon completion of the re-evaluation work. We estimate that 200 to 250 walls will require analysis. Unless the systems identification review reveals fewer walls in the proximity to safety-related components, the analysis is scheduled to extend into August 1981. We will attempt to improve upon this date but the insufficient information available at this time does not enable us to provide any better judgement concerning schedules. Should you desire status reports during the course of the analysis work we would be glad to provide them at your request.

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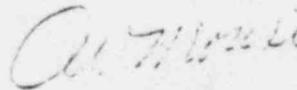
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All of the walls at Pilgrim Station are vertically and horizontally reinforced which decreases the probability of wall failure due to out-of-plane earthquake loadings. A greater analytical effort will be required for the two groups of shear walls at Pilgrim but we do not have any reason for concern as to their structural adequacy at this time.

Inspections by the contractor of the walls during construction and upon completion of construction was required by the Pilgrim I Construction Specifications. Methods of inspection included taking core samples, radiology, and removal of face panels of blocks at the bottom of walls. Records of some of these inspections have been found to date and further investigation is being conducted.

Therefore, BECo. believes that there is every reason to be assured that Pilgrim's masonry walls were built according to plan and that the analysis will verify the structural adequacy. Should there be any question as to the adequacy of a particular wall during the re-evaluation phase, BECo. will take all measures necessary to ensure the safety of Pilgrim Station.

Very truly yours,



Commonwealth of Massachusetts)
County of Suffolk)

Then personally appeared before me A. Victor Morisi, who, being duly sworn, did state that he is Manager - Nuclear Operations Support Department of Boston Edison Company, the applicant herein, and that he is duly authorized to execute and file the submittal contained herein in the name and on behalf of Boston Edison Company and that the statements in said submittal are true to the best of his knowledge and belief.

My Commission expires: *Jan. 17, 1986*

Harrison R. Balfour
Notary Public

cc: Director
Office of Inspection and Enforcement
Division of Safeguards Inspection
Washington, D. C. 20555