

BOSTON EDISON COMPANY  
800 BOYLSTON STREET  
BOSTON, MASSACHUSETTS 02199

WILLIAM D. HARRINGTON  
SENIOR VICE PRESIDENT  
NUCLEAR

February 15, 1983  
BECO Letter No. 83-40

Mr. Domenic B. Vassallo, Chief  
Operating Reactors Branch #2  
Division of Licensing  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

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

Additional Information on Block Walls  
(IE Bulletin 80-11)

Reference: Letter from Mr. A. V. Morisi to Mr. D. B.  
Vassallo dated September 29, 1982 (BECO.  
Ltr. #82-261)

Dear Sir:

The reference letter supplied information which addressed five of seven requests by the NRC, following a tour of Pilgrim Nuclear Power Station concerning block walls conducted June 16 and 17, 1982.

The information contained in this submittal addresses the remaining two requests.

Request #6

Provide a summary demonstrating the confidence level (based on statistical analysis) of the verification program which was conducted to assure that the walls were built as specified on the design drawings.

Response

A 95% confidence level requirement was established for in-situ tests to determine whether the blockwalls were constructed in accordance with original drawings and specifications.

The Bernoulli distribution formula was used to provide the 95% confidence level. Based on this distribution formula, ranges for accepting, rejecting and for additional testing were derived.

Verification tests were performed to confirm the existence of the following items for the Pilgrim masonry walls:

1. Vertical reinforcement
2. Horizontal dur-o-wall
3. Grouted cells

8302230642 830215  
PDR ADOCK 05000293  
Q PDR

IE11

Mr. Domenic B. Vassallo, Chief  
February 15, 1983  
Page 2

4. Anchorage to adjacent structures, and
5. Grout or mortar in the collar joint of multi-wythe walls.

The assumption was made that each of the above items could be treated independently; that is, a wall may be accepted or rejected only for each of the above.

Results of the testing program for each category were factored back into the masonry wall properties used in the analysis. When the results fell within the "accept" range, the wall properties were based on the construction drawings. However, when results fell within the "reject" or even the "continue" ranges, wall properties were conservatively revised.

In cases where the Bernoulli distribution formula was not believed to be appropriate, alternative statistical methods were used to ensure a 95% confidence level. The results were conservatively factored into the masonry wall properties for analysis.

#### Request #7

The licensee will provide a statement to indicate the status regarding jet impingement and pipe rupture loads.

#### Response

The effect of jet impingement and pipe rupture loads has been considered in the analysis of the potential consequences of postulated high energy piping failures outside primary containment. The results of this analysis, and the modifications to address such consequences, are documented in Appendix O to the Pilgrim Nuclear Power Station Final Safety Analysis Report (FSAR).

While we are confident that Appendix O adequately addresses pipe rupture loads and jet impingement, we have undertaken a further review of walls subject to these loads and the criteria of IEB80-11. The preliminary results of this review have indicated eleven (11) walls which merit further analysis. A systematic review of these walls, consistent with the requirements of the Bulletin, is currently in progress.

We have performed an engineering assessment of the subject 11 walls to ensure plant safety while the systematic review continues. This assessment indicates that no localized wall failures due to pipe whip or jet impingement could generate a plant condition which would adversely affect achieving safe shutdown.

We believe this response satisfactorily addresses your requests. Should you require further information concerning this issue, please contact us.

Very truly yours,

*W D Harrington*