June 26, 1984

Docket No. 50-293

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Mr. William D. Harrington
Senior Vice President, Nuclear
Boston Edison Company
800 Boylston Street
Boston, Massachusetts 02199

Dear Mr. Harrington:

SUBJECT: MARK I CONTAINMENT LONG TERM PROGRAM - PLANT UNIQUE ANALYSIS REPORT LOADS EVALUATION FOR PILGRIM NUCLEAR POWER STATION

The NRC staff and its consultant, Brookhaven National Laboratory (BNL), are reviewing the loads aspects of your plant unique analysis report. As a result of our review to date we have prepared the enclosed request for additional information.

To expedite this review we request that within five weeks of the date of this letter a meeting between the NRC and our consultants and you and your contractor be held to discuss your response to these issues. Since our intent is to resolve these issues at this meeting, it is imperative that you have a representative present who has the authority to make the decisions necessary to accomplish this goal.

We suggest that the meeting be held at your contractor's office; however, we are amenable to having it wherever it is most convenient. Please establish a meeting date and notify the NRC project manager within ten days of receipt of this letter. If you cannot meet the above schedule, please propose an alternative one.

This request for information was approved by the Office of Management and Budget under clearance number 3150-0091 which expires October 31, 1985.

Sincerely,

Original signed by/

Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

Enclosure:
As stated

cc w/enclosure:
See next page

DL:ORB#2	DL:ORB#2	DL:LB#2	DL:ORB#2
SNorris:ajs	PLeech	BSiegel	DVassallo
06/26/84	06/26/84	06/26/84	06/26/84

Mr. William D. Harrington
Boston Edison Company
Pilgrim Nuclear Power Station

cc:

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REQUEST FOR ADDITIONAL INFORMATION
PILGRIM NUCLEAR POWER STATION
DOCKET NO. 50-293

ITEM 1: PUAR Section 3.1-3.2

During pool swell, the water mass was modeled "using a 3D virtual mass simulation as an integral part of the structural analysis", and the total water mass used was taken as the average of the effective masses for the full and zero delta-p cases.

How was the water mass distributed in the computer simulation? How sensitive were the controlling stresses to the distribution and magnitude of the water mass?

ITEM 2: PUAR Section 4.3.2.1

In the computation of the downcomer first lateral response frequency, what virtual mass of water was used? (At what level was the water assumed to be inside the downcomer, and how was the displacement of the outside water accounted for?).

How sensitive was the controlling stress (e.g., at the vent-header/downcomer intersection) to what was assumed about the water mass in the downcomer frequency calculation?

ITEM 3: PUAR Section 4.3.3.1

It is stated that "the combined effects of the CO downcomer loads (are) bounded by CH lateral loads".

Does this apply to the entire vent-header/downcomer system as well as the individual downcomer pairs? The LDR specifies the CO loading on the entire vent-header/downcomer system as the worst of eight different phasing combinations of the loads on the various downcomer pairs in the system. Were these considered, and was the worst of them bounded by the chugging load?

ITEM 4: PUAR Sections 3.2.4, Appendix 1

Provide the following additional information regarding the in-plant SRV tests conducted at Pilgrim and the SRV design loads extrapolated from the tests:

1.0 Description of the tested Quencher Device

1.1 Drawings showing details of the quencher geometry - plan, elevation, arm length, arm diameter, hole arrangement, spacing, size, etc.

1.2 Location of quencher device relative to suppression pool boundaries and suppression pool surface.

1.3 Any difference between the tested quencher configuration and the Monticello version (as described in GE NEDE-24542-P) highlighted and quantified.

2.0 A description of the loads observed during testing -

2.1 Peak overpressure (POP) and underpressure (PUP) recorded on the torus shell during each relevant SRV actuation.

2.2 A measure of the frequency content of each pressure signature.

3.0 A description of the test conditions -

3.1 Geometry of the tested SRVDL (diameter, length, free volume, and routing below pool surface).

3.2 Geometry of any SRVDLs in the plant that differ significantly from the tested SRVDL.

3.3 SRV steam flow rate (MS), pool temperature (TPL), pipe temperature (TP), water leg length (LW) and pressure differential (P), if any, for each test.

3.4 Minimum P permitted by NRC Technical Specification and corresponding LW for all SRVDLs.

4.0 A description of the design conditions for each load case used for design -

4.1 Geometry of all SRVDLs involved and their azimuthal location in the torus.

4.2 TP, TPL, MS, P and LW for all SRVDLs involved.

5.0 A description of the design loads for each load case -

5.1 Normalized pressure signature.

5.2 Single valve POP/PUP values.

5.3 Spatial attenuation of the POP/PUP values (if this differs from the LDR methodology, sufficient additional torus shell pressure data must be supplied to justify such deviation).

5.4 Frequency range considered.

5.5 Procedure used to combine loads for multiple values.

ITEM 5: PUAR Appendix 1

With regard to the Table on page A1-4 and Figure A1-7, justify the inclusion of data from Nine Mile Point which uses a quencher device radically different from the other three plants included in the data base.

Identify any structures for which SRV drag allowable margins are less than 3.0 and state what the margins are. In other words, list those structures which would be stressed beyond allowable limits if SRV drag loads were increased 3.0 times in Pilgrim and provide the margins for these structures.

ITEM 6: PUAR Section 2.2.1

The footnote on page 7 of the PUAR states that only 4 of the 6 SRV quenchers installed in Pilgrim are operative, with the other two not connected to steam relief lines. Is all the wetwell piping in place for the non-functioning quencher devices? How were multiple valve SRV loads computed for Pilgrim - based on four or on six quenchers?

ITEM 7: PUAR Section 2.2.1

What is the vertical location of the pool temperature sensors with respect to the centerline of the T-quenchers?