

BOSTON EDISON COMPANY  
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WILLIAM D. HARRINGTON  
SENIOR VICE PRESIDENT  
NUCLEAR

February 12, 1985  
BECO 85-029

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 DPR-35  
Docket 50-293

Response to NRC Request for Additional Information  
Concerning the Pilgrim Station ISI Program

- References: (a) NRC letter dated October 1, 1984 (BECO Letter  
1.84.398)  
(b) BECO letter dated November 16, 1984 (BECO Letter  
2.84.196)

Dear Sir:

Attached is a copy of a Southwest Research Institute (SwRI) letter of December 4, 1984 to Boston Edison concerning Nozzles N1B and N2K. SwRI has prepared the requested information on the nozzles for BECO.

A draft copy of this letter was given to Mr. P. H. Leech of your office prior to BECO's review of it. This was done to facilitate your review. BECO has completed its review, and herein officially submits the letter unchanged from the draft.

Should you have any further questions, please contact us.

Very truly yours,

*WD Harrington*

MTL/kmc

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PDR ADOCK 05000293  
Q PDR

*Acc 1/1*

ENCLOSURE (A)

# SOUTHWEST RESEARCH INSTITUTE

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QUALITY ASSURANCE SYSTEMS  
AND ENGINEERING DIVISION

TELEX 767209 NUC ENGR SNT A  
TELEX 767579 NUC ENGR SNT  
TELECOPIER 684-4822

December 4, 1984  
Doc. No. 17-7859(24)

Mr. Frank Famulari  
Boston Edison Company  
Pilgrim Nuclear Power Station  
RFD 1, Rocky Hill Road  
Plymouth, Massachusetts 02360



Subject: Transmittal of Information Pertaining to Relief  
Request Submitted by the Boston Edison Company (BECo)

Reference: Telephone conversation between Wayne T. Flach and  
Murray Williams, dated November 27, 1984

Dear Mr. Famulari:

As requested by BECo, enclosed is the information pertaining to obtainable coverage on Reactor Pressure Vessel Nozzles at Pilgrim Nuclear Power Station. This information is to be used in support of the relief request submitted by BECo. This information consists of two attachments. Attachment 1 explains the Examination Area Limitations. Attachment 2 is a table consisting of: Weld No., Beam Angle, Beam Direction, and Percent of Code Volume Not Effectively Examined. It should be noted that this percentage was calculated as per 1980/W80 ASME Section XI Code.

If we can be of any further assistance, please contact us.

Sincerely,

A handwritten signature in cursive script that reads "Steven W. Richter".

Steven W. Richter  
Project Manager  
Inspection Engineering Section  
Department of Engineering Services

CE/cam

Attachments



SAN ANTONIO, TEXAS  
WITH OFFICES IN HOUSTON, TEXAS AND WASHINGTON, D.C.

## ATTACHMENT 1

### EXAMINATION AREA LIMITATIONS FOR THE PILGRIM REACTOR PRESSURE VESSEL

Limitations to the Mech UT examination of the N1B and N2K nozzle-to-shell weld areas were experienced during the ISIs of the Pilgrim RPV. These limitations were due to:

- (1) component geometry which prohibited meaningful orientation of the sound beams through all sections of the ASME Code-specified A-B-C-D-E examination volume,
- (2) surrounding structures such as permanent insulation and brackets which interfered with complete scanning access to all required component surfaces, and
- (3) interface noise between the search unit wedge and the component surface which interfered with coverage in the shallow volume adjacent to the outside surface of the component.

The table in Attachment 2 quantifies the limitations in terms of percent of the Code-required examination volume not effectively examined by a given ultrasonic beam and collectively by any combination of sound beams.

In addition to the limitations described above, transverse examinations were not performed. Due to the geometry of the nozzle-to-shell weld and the design limitations of equipment currently available, a meaningful examination is not achievable.

## ATTACHMENT 2

## PILGRIM EXAMINATION LIMITATION REPORT

Weld No.	Beam Angle	Beam Direction	Percent of Code Volume Not Effectively Examined
N1B	0°	N/A	67.70
N1B	45°	Toward Nozzle Centerline	30.92
N1B	60°	Toward Nozzle Centerline	47.42
N1B	45°	Toward Vessel Centerline	79.10
N1B	60°	Toward Vessel Centerline	85.32
N1B	Composite	N/A	30.92 *
N2K	0°	N/A	27.79
N2K	45°	Toward Nozzle Centerline	27.28
N2K	60°	Toward Nozzle Centerline	36.43
N2K	45°	Toward Vessel Centerline	48.14
N2K	60°	Toward Vessel Centerline	65.11
N2K	Composite	N/A	27.28*

NOTE: No transverse examinations performed (UT45T or UT60T) due to geometry and equipment limitations.

\*Composite Percentage of Volume Not Effectively Examined includes that material not covered by at least one calibrated beam.