

DEC 10 1991

Docket No. 50-293

Boston Edison Company  
ATTN: Mr. George Davis  
Senior Vice President-Nuclear  
Rocky Hill Road  
Plymouth, Massachusetts 02360

Dear Mr. Davis:

Subject: NRC Inspection Report No. 50-293/91-17

This refers to your letters dated October 17 and November 27, 1991, in response to our letter dated September 17, 1991.

Thank you for informing us of the corrective and preventive actions documented in your letter. These actions will be examined during a future inspection of your licensed program.

Your cooperation with us is appreciated.

Sincerely,

Original Signed By:  
James C. Linville

James Linville, Chief  
Projects Branch No. 3  
Division of Reactor Projects

OFFICIAL RECORD COPY

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cc:

R. Anderson, Vice President, Nuclear Operations and Station Director  
E. Kraft, Plant Manager  
J. Dietrich, Licensing Division Manager  
V. Oheim, Regulatory Affairs Manager  
E. Robinson, Nuclear Information Manager  
R. Hallisey, Department of Public Health, Commonwealth of Massachusetts (w/cy of Licensee's Response Letter)  
R. Adams, Department of Labor and Industries, Commonwealth of Massachusetts (w/cy of Licensee's Response Letter)  
D. Long, Plant Support Department Manager  
The Honorable Edward M. Kennedy (w/cy of Licensee's Response Letter)  
The Honorable John F. Kerry (w/cy of Licensee's Response Letter)  
The Honorable Edward J. Markey (w/cy of Licensee's Response Letter)  
The Honorable Edward P. Kirby (w/cy of Licensee's Response Letter)  
The Honorable Peter V. Forman (w/cy of Licensee's Response Letter)  
B. McIntyre, Chairman, Department of Public Utilities (w/cy of Licensee's Response Letter)  
Chairman, Plymouth Board of Selectmen (w/cy of Licensee's Response Letter)  
Chairman, Duxbury Board of Selectmen (w/cy of Licensee's Response Letter)  
Plymouth Civil Defense Director (w/cy of Licensee's Response Letter)  
P. Gromer, Massachusetts Secretary of Energy Resources (w/cy of Licensee's Response Letter)  
Sarah Woodhouse, Legislative Assistant (w/cy of Licensee's Response Letter)  
A. Noguee, MASSPIRG (w/cy of Licensee's Response Letter)  
Regional Administrator, FEMA (w/cy of Licensee's Response Letter)  
Pilgrim Service List (w/cy of Licensee's Response Letter)  
Public Document Room (PDR) (w/cy of Licensee's Response Letter)  
Local Public Document Room (LPDR) (w/cy of Licensee's Response Letter)  
Nuclear Safety Information Center (NSIC) (w/cy of Licensee's Response Letter)  
NRC Resident Inspector (w/cy of Licensee's Response Letter)  
Commonwealth of Massachusetts SLO Designee (w/cy of Licensee's Response Letter)

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Boston Edison Company

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DEC 10 1991

bcc w/cy of Licensee's Response Letter:  
Region I Docket Room (with concurrences)  
Management Assistant, DRMA (w/o encls)  
J. Linville, DRP  
J. Rogge, DRP  
J. Macdonald, SRI - Pilgrim (w/concurrences)  
R. Lobel, EDO  
W. Butler, NRR  
R. Eaton, NRR

RI:DRP

*ll*  
Lorson/meo  
12/5/91

RI:DRP

*Am*  
Rogge  
*12/10*

RI:DRP

*SL*  
Linville  
*12/10*

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A:REP9117.MEO

PILGRIM SERVICE LIST

Mr. R. A. Anderson  
Vice President of Operations and  
Station Director  
Pilgrim Nuclear Power Station  
RFD #1, Rocky Hill Road  
Plymouth, Massachusetts 02360

Office of the Commissioner  
Massachusetts Dept. of Environmental  
Quality Engineering  
One Winter Street  
Boston, Massachusetts 02108

Resident Inspector  
U.S. Nuclear Regulatory Commission  
Pilgrim Nuclear Power Station  
Post Office Box 867  
Plymouth, Massachusetts 02362

Office of the Attorney General  
One Ashburton Place  
20th Floor  
Boston, Massachusetts 02108

Mr. John Dietrich  
Licensing Division Manager  
Boston Edison Company  
25 Braintree Hill Park  
Braintree, Massachusetts 02184

Chairman, Board of Selectmen  
11 Lincoln Street  
Plymouth, Massachusetts 02360

Mr. A. David Rodham, Director  
Massachusetts Civil Defense Agency  
400 Worcester Road  
P. O. Box 1496  
Framingham, Massachusetts 01701  
ATTN: James Muckerheide

Mr. Robert M. Hallisey, Director  
Radiation Control Program  
Massachusetts Dept. of Public Health  
150 Tremont Street  
2nd Floor  
Boston, Massachusetts 02111

Mr. H. Fern Oheim  
Manager, Regulatory Affairs Department  
Pilgrim Nuclear Power Station  
RFD #1, Rocky Hill Road  
Plymouth, Massachusetts 02360

Ms. Elaine D. Robinson  
Nuclear Information Manager  
Pilgrim Nuclear Power Station  
RFD #1, Rocky Hill Road  
Plymouth, Massachusetts 02360

Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, Pennsylvania 19406

Mr. Thomas C. Rapone  
Secretary of Public Safety  
Executive Office of Public Safety  
One Ashburton Place  
Boston, Massachusetts 02108

Chairman, Citizens Urging Responsible  
Energy  
P. O. Box 2621  
Duxbury, Massachusetts 02331

Ms. Nancy Desmond  
Compliance Division Manager  
Pilgrim Nuclear Power Station  
RFD #1, Rocky Hill Road  
Plymouth, Massachusetts 02360

**BOSTON EDISON**

Pilgrim Nuclear Power Station  
 Rocky Hill Road  
 Plymouth, Massachusetts 02360

George W. Davis  
 Senior Vice President - Nuclear

October 17, 1991  
 BECo Ltr. 91-133

U.S. Nuclear Regulatory Commission  
 Attn: Document Control Desk  
 Washington, D.C. 20555

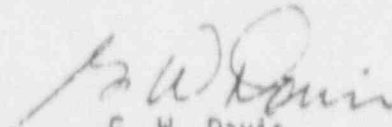
Docket No. 50-293  
License No. DPR-35

SUBJECT: REPLY TO A NOTICE OF VIOLATION (REFERENCE NRC REGION I  
 INSPECTION REPORT NO. 50-293/91-17)

Dear Sir:

Enclosed is Boston Edison Company's reply to the Notice of Violation  
 contained in the subject inspection report.

Please do not hesitate to contact me if there are any questions regarding  
 the enclosed reply.

  
 G. W. Davis

DWE/bal

Enclosure: Reply to the Notice of Violation

cc: Mr. Thomas T. Martin  
 Regional Administrator, Region I  
 U.S. Nuclear Regulatory Commission  
 475 Allendale Rd.  
 King of Prussia, PA 19406

Mr. R. B. Eaton  
 Div. of Reactor Projects I/II  
 Office of NRR - USNRC  
 One White Flint North - Mail Stop 1401  
 11555 Rockville Pike  
 Rockville, MD 20852

Sr. NRC Resident Inspector - Pilgrim Station

Standard BECo Distribution

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ENCLOSURE

REPLY TO THE NOTICE OF VIOLATION

Boston Edison Company  
Pilgrim Nuclear Power Station

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

As a result of the inspection conducted at Pilgrim Nuclear Power Station from July 7, 1991 through August 24, 1991 and in accordance with the NRC Enforcement Policy (10 CFR Part 2, Appendix C), the following Violation was identified:

NOTICE OF VIOLATION

Technical Specification 6.8.A requires the establishment of the applicable procedures recommended in Appendix A of Regulatory Guide 1.33. Section 9 of Appendix A specifies that maintenance which can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedure, documented instructions, or drawings appropriate to the circumstances.

Contrary to the above the licensee procedure for drywell head installation 3.M.4-48, Revision 13, "Opening and Closing of the Reactor Pressure Vessel" was not properly established in that the procedure did not specify the proper orientation of drywell head washers during installation, nor proceduralized a final torque check following completion of the planned drywell head torque sequence.

This is a Severity Level IV violation (Supplement I).

REASON FOR THE VIOLATION

A critique and root cause analysis of the drywell head washer failures identified procedure weaknesses that were a contributor to installing some washers in an inverted orientation.

The plant drawing (CIA-10-4) of the drywell head/top flange assembly identifies the orientation of the drywell head washers. The drawing was available but was not specifically referenced in the procedure. The procedure contained instructions for drywell head gasket installation, drywell head installation, and drywell head bolt torquing. Plant and contractor personnel experienced in drywell head installation did not believe that additional drywell head washer installation detail was necessary to be specifically identified in the procedure.

A final torque check following completion of the drywell head bolt torque sequence was not proceduralized because a final torque check is considered to be part of the final torque sequence. In the closure of a bolted joint where a final torque value is specified and is the criteria for which the joint is accepted, verification of the final torque value is standard practice. The final torque sequence and final torque value were identified in the procedure. These instructions were also reviewed by experienced plant and contractor personnel prior to the refueling outage and were considered acceptable.

(REPLY TO NOTICE OF VIOLATION  
(CONTINUED)

CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

The orientation of the drywell head washers was identified in the work package used for the reinstallation of the drywell head. The work package included a satisfactory final cover pass torque of all drywell head bolts.

CORRECTIVE ACTION TO PRECLUDE RECURRENCE

To preclude recurrence of similar violations, Boston Edison will implement additional corrective actions that include the following:

- The procedure will be revised to reference the drawing of the drywell head/top flange assembly.
- The drawing of the drywell head/top flange assembly will be enhanced relative to the detail of the drywell head washers.
- The procedure will be revised to include two torquing phases. The first phase compresses the drywell head gasket and brings the drywell head flanges to a metal-to-metal contact. The second phase preloads the bolts to the final torque value using a minimum of two torque passes. The satisfactory completion of the last torque pass ensures that all drywell head bolts are left at the desired torque value.

Other corrective actions are identified in the root cause analysis for Failure and Malfunction Report 91-348. These actions will be addressed separately from this violation response.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance will be achieved when the drawing is revised and the changes have been incorporated into the procedure. The drawing and procedure changes are expected to be completed by December 20, 1991 but will be completed prior to the next removal of the drywell head.



**BOSTON EDISON**

Pilgrim Nuclear Power Station  
Rocky Hill Road  
Plymouth, Massachusetts 02360

George W. Davis  
Senior Vice President - Nuclear

November 27, 1991  
BECo Ltr. 91-998

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D.C. 20555

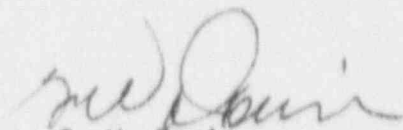
Docket No. 50-293  
License No. DPR-35

SUBJECT: SUPPLEMENTAL REPLY TO A NOTICE OF VIOLATION, (REFERENCE NRC REGION I INSPECTION REPORT NO. 50-293/91-17)

Dear Sir:

Enclosed is Boston Edison Company's supplemental reply to the Notice of Violation contained in the subject inspection report. The portions of this reply containing supplemental information are identified by a vertical line in the applicable margin. This supplemental reply is submitted in response to Resident Inspector questions regarding the initial reply submitted on October 17, 1991 (BECo Ltr. 91-133).

Please do not hesitate to contact me if there are any questions regarding the enclosed reply.

  
G. W. Davis

DWE/bal

Enclosures: Supplemental Reply to the Notice of Violation

cc: Mr. Thomas T. Martin  
Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Rd.  
King of Prussia, PA 19406

Mr. R. B. Eaton  
Div. of Reactor Projects I/II  
Office of NRR - USNRC  
One White Flint North - Mail Stop 1401  
11555 Rockville Pike  
Rockville, MD 20852

Sr. NRC Resident Inspector - Pilgrim Station

Standard BECo Distribution

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ENCLOSURE

SUPPLEMENTAL REPLY TO THE NOTICE OF VIOLATION

Boston Edison Company  
Pilgrim Nuclear Power Station

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

As a result of the inspection conducted at Pilgrim Nuclear Power Station from July 7, 1991 through August 24, 1991 and in accordance with the NRC Enforcement Policy (10 CFR Part 2, Appendix C), the following Violation was identified:

NOTICE OF VIOLATION

Technical Specification 6.8.A requires the establishment of the applicable procedures recommended in Appendix A of Regulatory Guide 1.33. Section 9 of Appendix A specifies that maintenance which can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedure, documented instructions, or drawings appropriate to the circumstances.

Contrary to the above the licensee procedure for drywell head installation 3.M.4-48, Revision 13, "Opening and Closing of the Reactor Pressure Vessel" was not properly established in that the procedure did not specify the proper orientation of drywell head washers during installation, nor proceduralized a final torque check following completion of the planned drywell head torque sequence.

This is a Severity Level IV violation (Supplement I).

REASON FOR THE VIOLATION

Procedure 3.M.4-48 (Rev. 12) was technically reviewed prior to the refueling outage. The review identified improvements in other portions of the procedure. The improvements were incorporated and Procedure 3.M.4-48 (Rev. 13) was issued on May 3, 1991. The Drywell head was reinstalled in late July 1991, near the end of the recent refueling outage. A critique on July 30, 1991 and subsequent root cause analysis of the drywell head washer failures identified previously unidentified weaknesses in the drywell head installation portion of the procedure (Rev. 13) that were a contributor to installing some washers in an inverted orientation.

The plant drawing (CIA-10-4) of the drywell head/top flange assembly identifies the orientation of the drywell head washers. The drawing was available but was not specifically referenced in Procedure 3.M.4-48 (Rev. 13). The procedure contained instructions for drywell head gasket installation, drywell head installation, and drywell head bolt torquing but did not include details regarding how the drywell head washer sets were to be installed. Plant and contractor personnel experienced in drywell head installation did not believe that additional drywell head washer installation detail was necessary to be specifically identified in the procedure when Procedure 3.M.4-48 (Rev. 12) was reviewed. Therefore, the procedure (Rev. 13) did not include details regarding how the drywell head washers were to be installed.

A final torque check following completion of the drywell head bolt torque sequence was not proceduralized because a final torque check was considered to be part of the final torque sequence. In the closure of a bolted joint where a final torque value is specified and is the criteria for which the joint is accepted, verification of the final torque value is standard practice. The final torque sequence and final torque value were identified in the procedure (Rev. 12). These instructions were also reviewed by experienced plant and contractor personnel prior to the refueling outage and were considered acceptable.

SUPPLEMENTAL REPLY TO THE NOTICE OF VIOLATION  
(CONTINUED)

CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

The orientation of the drywell washers was identified in the work package used for the reinstallation of the drywell head. The work package included a satisfactory final cover pass torque of all drywell head bolts.

CORRECTIVE ACTION TO PRECLUDE RECURRENCE

To preclude recurrence of similar violations, Boston Edison will implement additional corrective actions that include the following:

- The procedure will be revised to include specific detail regarding how the drywell head upper and lower washer sets are to be installed.
- The procedure will be revised to reference the drawing of the drywell head/top flange assembly.
- The drawing of the drywell head/top flange assembly will be enhanced relative to the detail of the drywell head washers.
- The procedure will be revised to include two torquing phases. The first phase compresses the drywell head gasket and brings the drywell head flanges to a metal-to-metal contact. The second phase preloads the bolts to the final torque value using a minimum of two torque passes. The satisfactory completion of the last torque pass ensures that all drywell head bolts are left at the desired torque value.

Other corrective actions are identified in the root cause analysis for Failure and Malfunction Report 91-348. These actions will be addressed separately from this violation response.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance will be achieved when the drawing is revised and the changes have been incorporated into the procedure. The drawing and procedure changes are expected to be completed by December 20, 1991; however, if the drawing and procedure changes are not completed by December 20, 1991 the changes will be completed prior to the next removal of the drywell head.