



**BOSTON EDISON**

Executive Offices  
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**James M. Lydon**  
Chief Operating Officer

February 12, 1987  
BECO Ltr. #87-024

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, DC 20555

Mr. William F. Kane, Director  
Division of Reactor Projects  
631 Park Avenue  
King of Prussia, PA 19406

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

Subject: Response to NRC Inspection Report No. 50-293/86-37

Dear Mr. Kane:

Attached please find Boston Edison Company's response to NRC Inspection Report 50-293/86-37. The inspection report contained two violations; one regarding control of modification work and the other involving adequacy of fire brigade drills. Response to the violation regarding modification work is included in Attachment 1 of this letter. As discussed in the inspection report, response to the fire brigade drill violation is not required since the corrective actions outlined in Section 3 of report 50-293/86-37 have been completed. The cover letter which transmitted Inspection Report 86-37 referenced an upcoming meeting to discuss the fire protection program at Pilgrim Station. That meeting was conducted on January 20, 1987 at Region 1 offices.

Please do not hesitate to contact me directly should you have any question regarding these matters.

Very truly yours,

*James M. Lydon*  
James M. Lydon

PJH/1a

Attachment: 1. Boston Edison Company Response to Violation

xc: Dr. M. McBride

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ATTACHMENT 1

BOSTON EDISON COMPANY RESPONSE TO VIOLATION

Boston Edison Company  
Pilgrim Nuclear Power Station

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

NRC Violation

Pilgrim Nuclear Power Station Technical Specification 6.8.A states that written procedures shall be established and implemented that meet or exceed the requirements of section 5.1 of ANSI N18.7-1972. Section 5.1 of ANSI N18.7-1972, Administrative Controls for Nuclear Power Plants, requires that modifications that may affect functioning of safety-related systems or components be performed in a manner to assure quality. ANSI N18.7 further requires that major modifications be performed in accordance with applicable design requirements, specifications and inspection requirements.

Contrary to the above as of November 21, 1986, safety-related modifications were not performed in a manner to assure quality and were not performed in accordance with applicable design requirements. In addition, post work inspections which were conducted were ineffective. Specifically, during implementation of Plant Design Change 83-51:

- (1) Ten electrical tie-ins to safety-related equipment were not properly implemented in that leads were landed on incorrect points on terminal strips; and,
- (2) Procedurally-required post work inspections did not identify the improper tie-ins.

As a result, the final configuration was not in accordance with approved design drawings and the prescribed post work testing was found to be invalid.

Boston Edison Response

Boston Edison concurs with the violation as stated with the exception that nine rather than ten of the electrical tie-ins were associated with safety related equipment (ref. NRC Violation (1) above). When the problem was discovered by Boston Edison personnel, all on-going tie-in activity was stopped pending a review of the situation and a determination of required corrective action. Followup corrective action included a review of the previous tie-ins associated with Plant Design Change 83-51 and identified that sixteen computer tap points were landed on the field rather than the panel side of the terminal strips. Nine of these tap points were associated with safety related equipment.

ATTACHMENT 1 (cont.)

BOSTON EDISON RESPONSE TO VIOLATION

An engineering review was then performed on the circuits associated with the sixteen tap points immediately after notification of the problem (ref memo NED 86-1229). The engineering review concluded that one of the sixteen tie-ins resulted in loss of the RCIC Minimum Pump Flow Valve (1301-60) closure circuit during the tie-in process. As such, the post work test for the 1301-60 tie-in was inadequate since the valve closure circuit was not tested. The other fifteen tap points, although landed on the field rather than the panel side of the terminal strip, were found to be electrically equivalent. Corrective action with regard to the 1301-60 tie-in was to re-perform the post work testing including the valve closure circuit. The test was performed satisfactorily. Since the other fifteen tie-ins were electrically equivalent, the post work testing previously performed was satisfactory.

Subsequently, an engineering decision was made to leave the sixteen tie-ins landed on the field side of the terminal strip. Appropriate design documents have been revised to reflect this change.

Cause of this violation was a combination of personnel error and possibly a confusing installation drawing. The personnel error resulted in the inadvertent landing of sixteen computer tap points on the field rather than the panel side of the terminal strips and was not discovered during the required post work inspection. The installation drawing, although correct, may have contributed to the personnel error since it physically implies that the panel side is the left side of the terminal strip when in fact the panel side is the right side of the strip.

As corrective action, the individuals involved with the installation and testing of the subject tie-ins were counseled to ensure closer on-site review of the signal tap installation instructions prior to implementing. The contractor involved has also instructed appropriate personnel that the signal tap point be made on the applicable side of the terminal strip as referenced in the installation instructions and has instructed personnel that verification of the internal (panel) and external (field) wiring shall be made by prior inspection. In addition, to resolve any potential misinterpretation of the installation drawings, a field revision notice was issued to clarify that the internal and external wiring shown on the installation drawings (connection diagrams) is presented diagrammatically. Further, a caution will be added to other existing and future connection diagrams conveying that the diagrams may not represent physical orientation of terminal boards or wiring. These cautions will be added to approximately 900 connection diagrams and are expected to be in place by 8/1/87.

We believe that the corrective actions stated herein will effectively preclude recurrence of a similar violation. Full compliance was achieved on 11/25/86 when the individuals involved with installation and the individuals involved with post work inspection were counseled.