BOSTON EDISON
Pilgrim Nuclear Power Station
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Ralph G. Bird
Senior Vice President — Nuclear

June 10, 1988
BECo Ltr. #88-094

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

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

Subject: NRC Inspection Report 50-293/88-07 (Violation Response)

Dear Sir:

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

Please do not hesitate to contact me directly if you have any questions on this response.

R.G. Bird

BL/bl

Attachment: Response to Violation 88-07-01

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

Sr. Resident Inspector - Pilgrim Station

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ATTACHMENT

Response to Violation 88-07-01
(Inspection Report 88-07)

Boston Edison Company
Pilgrim Nuclear Power Station

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

Notice of Violation

As a result of the inspection conducted on January 20 to March 5, 1988 and in accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C), the following violation was identified. In both the cited instances, prompting by the NRC inspector was required to avoid additional unplanned ESF actuations which would have resulted from continuing activities as specified in licensee approved procedures and instructions.

Technical Specification 6.8.A, states that written procedures shall be established and implemented that meet the requirements and recommendations of sections 5.1. and 5.3 of ANSI N18.7-1972.

ANSI N18.7-1972, Section 5.1, states that policies shall be provided to control the issuance of documents, including maintenance or modification procedures. These policies shall assure that documents are reviewed for adequacy. Section 5.1.6 states that maintenance and modifications that may affect functioning of safety-related systems shall be performed in a manner to assure quality, and shall be properly preplanned and performed in accordance with detailed written procedures.

Contrary to the above, implementation and testing of certain modifications was not properly preplanned and was not performed in a manner to assure quality. Further, established policies did not assure that procedures were properly reviewed for adequacy, in that approved modifications procedures were found to be technically inadequate.

1. On February 2, 1988 instructions contained in approved Plant Design Change (PDC) 83-51D for installation of computer point ISO 726 were inadequate. The computer signal cut-in sheet for ISO 726 did not specify adequate steps to prevent interruption of a common ground in the containment isolation system logic. As a result, unanticipated Engineered Safety Feature (ESF) actuations occurred during performance of the cut-in.

2. On February 10, 1988, approved post-modification test Procedure TP 88-09, Electrical Plant Line-up for Blackout Diesel Generator Load Test, Revision 0, was inadequate. Performance of TP 88-09 as written and approved would have resulted in an unanticipated automatic start of the "B" Emergency Diesel Generator (EDG). Adequate steps to prevent or to prepare for the EDG start were not included.

Response

The events described in the Notice of Violation involve work control processes. Because separate work control processes were involved, the response pursuant to the provisions of 10 CFR 2.201 is presented by event as follows:

- Response to Event A represents the February 2, 1988 event involving computer cut-in work.
- Response to Event B represents the February 10, 1988 event involving the blackout diesel generator load test.

Response to Event A

Cause:

The cause of the event was personnel error. Responsible personnel did not identify the arrangement of neutral leads and the impact of lifting the neutral lead at terminal CC-20 of panel C-941. The neutral leads in this panel are connected in series such that the disconnection (i.e. lifting of a lead from a neutral string) causes the downstream relay coils to become disconnected thereby initiating multiple ESF actuations.

The arrangement of neutral leads was not identified by the personnel responsible for the preparation and or review of the Emergency Plant Information Computer (EPIC) signal cut-in work sheet prepared as Field Revision Notice (FRN) 83-51D-150 or during the review and implementation of the Maintenance Request (MR) 87-45-479. Because of this oversight, instructions for jumpering of the neutral lead at CC-20 prior to lifting the lead were not provided.

Corrective Actions Taken Including Actions to Prevent Recurrence:

- EPIC cut-in work was stopped and the FRN was cancelled.
- The circuits were restored to previous conditions at approximately 2100 hours on February 2, 1988.
- Licensee Event Report (LER) 88-004-00 was issued for this event on March 2, 1988 in accordance with 10 CFR Part 50.73.
- Subsequent to investigations of the event and identification of the root cause, the remaining EPIC cut-in work sheets were reviewed and revised where necessary. The revised cut-in work sheets were issued as FRN 83-51D-153 on February 17, 1988.
- The MR Procedure 1.5.3 was revised to require an increased level of detail in the plans required for work on electrical equipment to prevent unplanned actuations or isolations. A specific caution for working with neutral leads connected in series has been added. The revised procedure identifies the need to use both internal and external wiring diagrams, in addition to the elementary diagrams, to identify the potential for equipment actuations or isolations. An additional caution for the lifting or landing of leads identifies the need to consider the use of jumpers and or placing the affected channel in a tripped condition.

- Signs were installed in Panel C-941 and C-942 cautioning that the neutral leads are connected in series.

On-going Corrective Actions:

- Engineering Service Request 88-156 has been initiated to evaluate the feasibility of achieving design improvement to neutral circuits.

- An interdisciplinary task force has been chartered to evaluate this event in combination with other selected events involving ESF actuations, determine the underlying causes, and recommend corrective actions to avoid future events.

Date of Full Compliance:

Full compliance for this event was achieved on February 17, 1988 when the revised EPIC cut-in work sheets were issued as FRN 83-51D-153.

Safety Consequences:

The unanticipated actuations posed no threat to the public health and safety. No degradation of plant equipment was identified.

Response to Event B

Cause:

The cause of the event was a lack of a procedural requirement to identify equipment responses/actuations in test procedures. Additionally, the personnel responsible for the development and review of preoperational tests were not sensitive to the need to prevent unanticipated ESF actuations. The "B" diesel breaker had been tagged out of service to isolate the 'B' diesel generator (DG) from loading onto the bus. Because of this clear electrical isolation, a DG start was not considered to be a concern. The primary focus of the test review was to assure the technical accuracy of the procedure and its adequacy to fully test the modified and/or new equipment.

Corrective Actions Taken Including Actions to Prevent Recurrence:

- Procedure TP88-09 was revised to prevent the start of the "B" diesel generator.

- Procedure 1.3.4 "Procedures" had been revised on 2/11/88 (during the week that TP88-09 was issued) to add a "Description" section to the procedure format for test procedures. This section is to contain an outline of the special test to be conducted in sufficient detail to allow a determination of plant response to be made. The expected plant responses for each operation anticipated to effect any monitored process shall be included.

- The Modification Management Division which is responsible for developing preoperational test procedures has revised the Manual of Work Processes to require consideration of potential ESF actuations during procedure preparation.

- The Technical Division and Systems Division have developed checklists for their review of preoperational tests that require consideration of potential ESF actuations.

On-Going Corrective Action:

An interdisciplinary task force has been chartered to evaluate this event in combination with other events involving ESF actuations, determine the underlying causes, and recommend corrective actions to avoid future events.

Date of Full Compliance:

Full compliance was achieved on February 18, 1988 when TP88-09 "Electrical Plant Line-Up for Blackout Diesel Generator Load Test" was revised to preclude unnecessary equipment actuations.

Safety Consequences:

TP 88-09 was revised to prevent an inadvertent start of the 'B' DG. Had the 'B' DG been inadvertently actuated, Control Room annunciation would have prompted operator action to manually secure the DG in accordance with Procedure 8.9.1, "Manual Start and Load Each D/G Once Per Month".

No adverse safety consequences resulted from this event.

BPL/bl