



**BOSTON EDISON**

Pilgrim Nuclear Power Station  
Rocky Hill Road  
Plymouth, Massachusetts 02360

**Ralph G. Bird**  
Senior Vice President — Nuclear

September 22, 1988  
BECO Ltr. #88-139

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

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

**Subject: Response to NRC Inspection Report No. 50-293/88-25**

Dear Sir:

This letter transmits Boston Edison Company's response to the NRC request contained in the transmittal letter for Inspection Report No. 50-293/88-25 regarding unplanned Engineered Safety Feature (ESF) actuations.

Attachment 1 provides Boston Edison Company's assessment of the significance, root cause and corrective actions taken or planned in response to the unplanned ESF actuations that have occurred in recent months at the Pilgrim Nuclear Power Station.

The actions discussed in Attachment 1 are proving to be effective in reducing the number of unplanned ESF actuations. No unplanned ESF actuations have occurred at the Pilgrim Station since July 11, 1988.

  
R. G. Bird

RLC/jmk

Attachment

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PDR ADOCK 05000293  
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cc: Mr. William T. Russell  
Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region I  
475 Allendale Road  
King of Prussia, PA 19406

Mr. D. G. McDonald  
Project Manager  
Division of Reactor Projects I/II  
U. S. Nuclear Regulatory Commission  
Mail Stop #14D1  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852

Senior NRC Resident Inspector  
Pilgrim Nuclear Power Station

## ATTACHMENT 1

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### RESPONSE TO NRC INSPECTION REPORT No. 50-293/88-25

Boston Edison Company recognizes the significance of unplanned Engineered Safety Feature (ESF) actuations since they represent an accumulation of events to which the plant staff must respond. The number of inadvertent ESF actuations that have occurred in recent months is a concern to Boston Edison Company and aggressive management action is being taken to provide effective resolution to preclude recurrence of these events.

The unplanned ESF actuations that have occurred since June 1, 1987, were reviewed by a Management Team that included the Plant Manager, Operations Manager, Technical Section Manager, Maintenance Section Manager, and an Engineering Department representative. The review was conducted within the self-assessment process and focused on:

- ° ensuring that the corrective actions associated with each unplanned event were adequate and effective in resolving the cause of the specific event; and
- ° reviewing the unplanned ESF actuations collectively to ensure that appropriate corrective action had been identified to preclude recurrence of the events.

When reviewing the unplanned ESF actuations collectively, the team categorized the events by initiating activity, organization involved, and root cause. The results of this review indicated that the most frequent contributing activities to unplanned ESF actuations involved the performance of:

- ° electrical surveillances;
- ° Instrumentation and Control (I&C) surveillances;
- ° preventive maintenance; and
- ° corrective maintenance.

The primary causes for the ESF actuations involved:

- ° personnel errors;
- ° inadequate preparation and technical review of procedures; and
- ° inconsistent quality in the preparation of Maintenance Request (MR) isolations.

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The review determined that heavy reliance had been placed on the Nuclear Watch Engineers (NWEs) to not only integrate the proposed activities into existing plant conditions, but also to verify that the proposed activities were in fact correct.

The review also concluded that certain plant configurations, particularly during activities which can only be performed during cold shutdown, may complicate or increase the risk of causing an ESF actuation associated with the performance of plant surveillances. This situation dictated the need to address the work practices necessary to deal with testing difficulties in a consistent manner until possible testability improvements in the plant can be evaluated.

Boston Edison Company has taken or will initiate the following actions to reduce the likelihood of unplanned ESF actuations:

- ° Continue to strengthen the new maintenance work control process as outlined to the NRC in BECO letter No. 88-98. This process includes the use of:
  - pre-job planning checklist;
  - detailed work plans;
  - proposed isolation prepared by Maintenance planning and reviewed by Maintenance supervision;
  - pre-job briefings of workers;
  - system window concept for maintenance and surveillance scheduling; and
  - the inclusion of a plant impact statement with work plans for the Watch Engineer.
- ° During periods of high surveillance and maintenance activity, until the feasibility of a computerized isolation system can be evaluated, a day shift staff SRO is assigned to review plant isolations prior to sending the work plans to the control room for authorization to start.
- ° Procedure 1.3.4, which governs the development and revision of procedures at the Pilgrim Station, has been revised to provide improved guidance for preparation and review of station procedures.
- ° Review for technical adequacy by the Technical Section of changes to logic system functional tests, electrical and I&C surveillance procedures (PNPS Operations Manual 3.M and 8.M series procedures), and pre-op temporary procedures (other than minor changes) is being accomplished through the use of checklists to ensure all aspects of the procedure change are scrutinized. This review process is being institutionalized.

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- ° The procedure validation process has been updated to include a more detailed checklist which incorporates INPO human performance factors evaluation.
- ° Independent verification for fuse removal and lifting of electrical leads has been initiated to reduce the risk of removal of the wrong fuses or lifting of the wrong leads.
- ° Maintenance Section procedure performance feedback forms are now available for use with the logic system functional tests and surveillance procedures to capture procedural, work methods, and plant testability improvement issues for resolution prior to the next scheduled performance of the procedure.
- ° To improve the testability of the plant so that surveillance procedures and logic systems functional tests can be conducted with a minimum probability for error, an item is included in the new Long Term Plan to systematically review surveillances for plant testability and work method improvements.
- ° Should an unplanned ESF actuation occur, Boston Edison Company will conduct a formal critique of the event and review the root cause against previous ESF actuations to determine if further programmatic corrective actions are needed.

The actions discussed above are proving to be effective in reducing the number of unplanned ESF actuations. No unplanned ESF actuations have occurred at the Pilgrim Station since July 11, 1988.

The Boston Edison objectives in these actions, in addition to the reduction of unplanned ESF actuations are to standardize work practices, improve work packages provided to the control room, improve plant testability and improve the tools available to the Watch Engineer for controlling planned testing and maintenance activities.