

the licensee failed to maintain the required level of security at the main vehicle access gate to the protected area. On the second occasion, February 15, 1980, a \$5000 civil penalty was proposed (which was subsequently paid by the licensee) for the licensee's failure to comply with NRC regulations pertaining to the shipment of radioactive materials. On the third occasion, July 8, 1980, a \$13,000 civil penalty was proposed (which was subsequently paid by the licensee) for the licensee's failure to maintain secondary containment integrity while moving irradiated fuel and for the failure to operate the auxiliary electrical system in accordance with plant procedures. These events reveal inadequacies in Boston Edison Company controls in several functional areas of activity.

III

The results of NRC inspections conducted between June 15 and September 30, 1981, reveal a series of breakdowns in control of engineering and design review activities, revision of operating procedures, facility maintenance activities, notifications to the NRC about safety problems, and onsite safety committee activities. One of the events identified concerned operation of the facility in violation of NRC combustible gas control system standards. These standards were imposed on November 27, 1978 through NRC regulation 10 CFR 50.44. The purpose of the regulation was to enhance the safety of operation of those light water reactors fueled with oxide pellets within cylindrical zircaloy cladding, such as at the Pilgrim facility, by assuring the capability to maintain containment integrity following a postulated loss of coolant accident (LOCA). However, as a result of an apparent failure to control safety-related activities, full

compliance with these standards at the Pilgrim facility was not achieved until June 5, 1981. Specifically, control of combustible gas concentrations within the containment after a postulated LOCA had not been assured.

In April 1979, Operating Procedure No. 2.2.70 for the primary containment atmosphere control system, the system relied upon to control post-LOCA combustible gas concentrations within the containment, was revised by the onsite staff to reposition the manually-operated nitrogen supply makeup block valves from the "locked open" to the "closed" position during power operation. This revision was not reflected in the system drawing, P&ID 6498-M-227, nor in the emergency procedure provided for post-LOCA containment nitrogen purging. The onsite safety review committee, consisting of station management and technical personnel, had reviewed and accepted this revision. Access to these valves could not be assured in all cases because of the likelihood of high radiation levels. The significance of this procedure change which in effect prevented remote operation of the system for post-LOCA containment purging, was not recognized until June of 1981. In early 1979 (inspection report 50-293/79-09), an NRC inspector noted, as an item of non-compliance, that containment nitrogen supply block valves were tagged closed when they were required to be in the opposite position. In response to this issue, Boston Edison Company stated in a letter to the NRC on October 2, 1979 that all 2.2-series procedures for safety systems had been checked against the P&ID's and that all safety systems were in compliance.

On October 19, 1979, Boston Edison Company informed the NRC that the Pilgrim facility complied with 10 CFR 50.44. This was not true. Exclusive of the failure to note the valve lineup change mentioned above, erroneous assumptions in the engineering analysis of the containment nitrogen purging system indicated the system could be reliably put into operation after a LOCA. However, to put this system into operation in accordance with the design condition required by Criterion 41 of Appendix A to 10 CFR Part 50, personnel had to manually open air-operated valves inside the reactor building, near the containment. Access to these valves could not be assured in all cases because of the likelihood of high radiation levels. This limitation on personnel accessibility was previously acknowledged in the design criteria documented in proposed Amendment 35 to the FSAR, dated January 28, 1974, regarding post-LOCA combustible gas control systems.

On March 28, 1980, Boston Edison Company engineering personnel documented the error regarding personnel access and initiated a modification to permit remote operation of the containment nitrogen purging system. However, NRC was not notified of the error nor of the apparent false statement of October 19, 1979 concerning compliance with 10 CFR 50.44.

In May, 1980, modification of the system was completed. However, since the modification did not include revision of Procedure No. 2.2.70 to change the position of the block valves from "closed" to "open", remote operation of the system was essentially precluded during subsequent operating periods. Consequently, there was not reasonable assurance that the purging system could have been used if needed in a post-LOCA situation. The onsite safety review

committee reviewed and accepted the system modification completed in May 1980 and yet failed to ensure that all procedural revisions necessary to ensure system operability had been made.

In July 1980, the containment nitrogen purging system was further disabled when the nitrogen makeup supply pipes were cut off and closed with pipe caps. (A Notice of Violation, dated August 11, 1981, was issued for the quality assurance violation associated with that maintenance activity.) The system remained disabled until June 5, 1981.

Another event concerned operation of the facility in violation of a Technical Specification for the containment integrity limiting condition for operation. On September 12, 1981, during the conduct of electrical maintenance activities, operating personnel de-energized electrical power supplies, which partly disabled the containment isolation control logic electrical circuits for two containment isolation valves in the steam supply pipe to the reactor core isolation cooling system. This resulted in a loss of redundancy provided in the design of the electrical circuits to assure automatic closure of these valves during certain postulated accidents. Failure of these valves to close when required could result in the release of significant amounts of radioactive materials into the environment. The facility was operated in this condition until September 16, when the misoperation was discovered by the NRC Resident Inspector.

IV

The recently discovered events described in Section III, together with the weaknesses described in Section II, reveal substantial serious breakdowns in Boston Edison Company's management controls related to the Pilgrim facility. Continued operation of the Pilgrim facility requires significant changes in Boston Edison Company's control of licensed activities. Accordingly, I have determined that the actions set forth below are required by the public health, safety, and interest, and therefore, should be imposed by an immediately effective order.

V.

In view of the foregoing, pursuant to Sections 103 and 161(i) of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Part 2 and 10 CFR Part 50, IT IS HEREBY ORDERED EFFECTIVE IMMEDIATELY THAT:

Within 30 days of this Order, the licensee shall submit to the Administrator of Region I of the NRC, for review and approval a comprehensive plan of action that will yield an independent appraisal of site and corporate management organizations and functions, recommendations for improvements in management controls and oversight, and a review of previous safety-related activities to evaluate compliance with NRC requirements. The plan shall include a description of the actions to be taken, required implementing staff and their qualifications,

documentation requirements, and the plan schedule with important milestones. Upon approval, the plan shall be implemented and the scheduled times for the milestones may be shortened but shall not be extended without prior written approval by the Region I Administrator. The licensee shall submit to the Region I Administrator a copy of the independent evaluation required by paragraph (1) and all other evaluations required by paragraphs (2) through (6).

The plan shall include at least the elements itemized below:

- (1) An independent organization retained by the licensee shall evaluate current organizational responsibilities, management controls, staffing levels and competence, training and retraining programs, communications, and operating practices both at the facility and the corporate office. This organization shall be directed to make recommendations for changes in the aforementioned areas that will assist the licensee in meeting NRC requirements, including the requirement for production, engineering and quality assurance functions to have sufficient authority and organizational freedom to identify problems and to initiate, recommend, or provide solutions.
- (2) A program that will assure that future information supplied by Boston Edison Company to the NRC, pertaining to analyses, designs, and the compliance of systems important to safety, is complete and accurate, and that previously submitted information is either complete and accurate or corrected so as to be complete and accurate.

- (3) The licensee shall review, evaluate and modify as necessary, the program for the development, approval and implementation of facility modifications and design changes in order to ensure compliance with the provisions of 10 CFR 50.59. Included in this review shall be an evaluation of whether any previous facility modifications made without prior Commission approval involved an unreviewed safety question as defined by 10 CFR 50.59.
- (4) The licensee shall review, evaluate and modify as necessary, presently approved safety-related procedures and the method used in the development and approval of these procedures. Included in this review shall be an evaluation of whether changes resulting from previous modifications have been appropriately addressed in operating and emergency procedures and plant drawings.
- (5) The licensee shall review, evaluate and modify as necessary, the program for training and retraining of personnel involved in maintenance and safety-related activities to ensure that the program adequately addresses facility modifications and procedure changes. Included in this review shall be an evaluation as to whether personnel were properly trained in changes resulting from previous facility modifications and revisions to procedures.
- (6) The licensee shall review, evaluate and modify as necessary, the program to assure that responsible corporate management oversight is provided for

safety-related activities, particularly onsite activities. This program shall include a daily audit of plant operations by a corporate management representative.

- (7) The licensee shall develop and implement a system of audits by management representatives aimed at assuring conformance to procedures and continued adherence to changes which result from the reviews identified in items (2) through (6) above.

The Administrator of Region I may relax or terminate any of the preceding conditions in writing for good cause.

VI

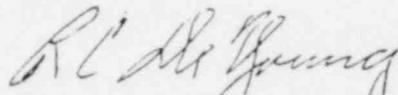
The licensee may request a hearing on this Order within 30 days of its issuance. A request for a hearing shall be submitted to the Director, Office of Inspection and Enforcement, U.S. Nuclear Regulatory Commission, Washington, D. C. 20555. A copy of the request shall also be sent to the Executive Legal Director at the same address. ANY REQUEST FOR A HEARING SHALL NOT STAY THE IMMEDIATE EFFECTIVENESS OF THIS ORDER.

If a hearing is requested, the Commission will issue an order designating the time and place of any such hearing. If a hearing is held, the issue to be considered at such hearing shall be:

Whether, on the basis of the matters set forth in Sections II and III of this Order, this Order should be sustained.

In the event that a need for further enforcement action becomes apparent, either in the course of a hearing or any other time, appropriate action will be taken by the Director.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard C. DeYoung, Director
Office of Inspection and Enforcement

Dated at Bethesda, Maryland
this 18 of January 1982