



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 126 TO FACILITY OPERATING LICENSE NO. DPR-35

BOSTON EDISON COMPANY

PILGRIM NUCLEAR POWER STATION

DOCKET NO. 50-293

1.0 INTRODUCTION

By letter dated May 23, 1986, the Boston Edison Company (the licensee) requested an amendment to Facility Operating License No. DPR-35 for the Pilgrim Nuclear Power Station. The proposed amendment would delete technical specification (TS) Sections 3.6.H and 4.6.H, Table 4.6.2, Bases 3.6.H, and 4.6.H. Those TS sections were initially imposed by the NRC staff through Amendment No. 7 to the Pilgrim Facility Operating License No. DPR-35, dated December 20, 1974, as a result of its evaluation of the licensee's analyses for high energy pipe breaks (HELB) outside containment. Amendment No. 7 added interim surveillance requirements to the TS to stipulate monthly visual inspections of the high energy piping outside containment while the unit is operating. TS Section 3.6.H.4 states that when the modifications described in FSAR Amendment No. 34 are complete, TS Sections 3.6.H and 4.6.H will no longer be required. Amendment 34, which is now FSAR Appendix O, provided analysis and documentation of Pilgrim HELB outside containment in response to the NRC Giambusso letter dated 1972.

BECO completed the modifications as committed with one exception. The exception was a proposed modification to install backup reactor building component cooling water (RBCCW) manual isolation valves for equipment area cooling units located within the reactor core isolation cooling (RCIC) pump compartment. This modification was not carried out as committed based on the licensee's reevaluation that the existing RCIC concrete floor is adequate to protect the cooling lines from any potentially generated missiles and resist the loads resulting from postulated breaks.

BECO provided Bectel Calculation 17322-55, which was referenced in the initial submittal, and additional clarification. The information provided did not affect the substance of the proposed amendment as noticed, (51 FR 25767), nor did it affect the no significant hazards consideration. As previously noted, the proposed amendment deletes interim requirements.

2.0 EVALUATION

In the May 23, 1986 letter, BECO indicated that all modification commitments as described in FSAR Amendment No. 34 had been completed and incorporated into BECO design documents with one exception. The exception was a proposed modification to install backup RBCCW manual isolation valves for the equipment area cooling units located within the RCIC pump compartment. This modification was not carried out as committed based on BECO's reevaluation. The reevaluation has determined

that the existing concrete floor of the RCIC compartment is capable of resisting all the loads resulting from the postulated RCIC pipe break so that the integrity of RBCCW will be assured. Subsequent to this review of the licensee's submittal, the staff requested clarification from the licensee regarding the criteria utilized in that HELB reevaluation. BECo used the criteria described in FSAR, Appendix O, in the reevaluation. That FSAR criteria incorporated the guidance provided in the December 1972 Giambusso letter and were approved by the staff. Therefore we have determined that the BECo's reevaluation methodology is acceptable.

The purpose of BECo's reevaluation of the upper concrete floor of the RCIC compartment is to assure that the concrete floor would be adequate to protect the RBCCW from losing its inventory in case of a RCIC steam line break, thus eliminating the need for installing backup RBCCW valves as originally committed. The concrete slab is 2 feet thick, in the shape of an equilateral triangle with a right angle at the apex and a length of 34.5 feet for the sides. The compartment side walls are 3 feet thick. The missile considered is a 8.5-inch long, 1/2-inch diameter valve stem with a velocity of 385 ft/sec. The maximum compartment pressure and temperature considered are 0.3psi and 300°F, respectively. Jet impingement force from a jet with a diameter of 66 inches and pressure of 2.5 psig is assumed in the study. A pipe whip with an arm of 7 feet 6 ⁵/₈ inches is assumed to occur at elevation (-) 13 feet 6 inches which is about 14 feet 3 inches below the bottom of the floor slab. The nearest distance which the whip can reach is (14 feet 3 inches) - (7 feet 6 ⁵/₈ inches) = 6 feet 8 ³/₈ inches below the bottom of the floor slab.

On the basis of the information, as indicated above, BECo has performed an analysis of all the effects of a pipe break on the RCIC compartment top slab and found the slab to be capable of resisting all the loads. Therefore, there is no need to install backup RBCCW manual valves as originally committed.

The staff has determined that the reevaluation methodology and resulting analysis on the effects of a pipe break on the RCIC compartment top slab are acceptable. Therefore, backup RBCCW manual isolation valves are not needed, all other modifications have been completed, and the interim visual inspections are no longer needed. Thus, the deletion of the interim requirements from the Technical Specifications is acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and a change to the surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously published a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth

in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration which was published in the Federal Register (51 FR 25767) on July 16, 1986 and consulted with the Commonwealth of Massachusetts. No public comments were received and the Commonwealth of Massachusetts did not have any comments.

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Dated: December 4, 1989