



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

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MAY 24 1977

MEMORANDUM FOR: K. R. Goller, Assistant Director for Operating Reactors,  
Division of Operating Reactors

FROM: D. G. Eisenhut, Assistant Director for Operational  
Technology, Division of Operating Reactors

SUBJECT: REVIEW OF REQUEST FOR LICENSE AMENDMENT TO AUTHORIZE  
SINGLE-LOOP OPERATION AT PILGRIM, UNIT 1

Plant Name: Pilgrim, Unit 1  
Docket Number: 50-293  
Responsible Branch: ORB #2  
Project Manager: P. O'Connor  
Reviewing Branch: Plant Systems Branch  
Status: Completed

The Plant Systems Branch has completed its review of the Boston Edison Company's request for authorization to operate Pilgrim, Unit 1 with one of its two recirculation loops out of service (single-loop operation) as detailed in its letters of November 17, 1975, and March 1 and 19, 1976.

The plant was originally designed to operate, though at some reduced power level, with either one of its two recirculation pumps out of service. The FSAR describes single-loop as well as two-loop operations as proposed modes of operation. Based on our review of the staff's original operating license SER for the Pilgrim Station, dated August 25, 1971, we have determined that the instrumentation, control, and electrical power systems required for the safety of the plant were judged acceptable by the staff and at that time the safety systems were evaluated against both IEEE-279 and the General Design Criteria (GDC) of Appendix A 10 CFR, Part 50.

We find, based on our review of the licensee's submittals for single-loop operation, that the only changes to the protection system are certain modifications to the rod block setpoints of the Rod Block Monitor (RBM) system and to the scram trip settings of the Average Power Range Monitor (APRM) system. The new rod block setpoints and scram trip settings for single-loop operation have been documented by the licensee and are listed in the Technical Specifications.

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During the interim period until the 1978 refueling the trip setting adjustments will be manually made with the plant in the Hot Standby mode of operation. During the 1978 refueling outage, hardwire modifications will be made to the RBM and APRM channels to allow setpoint changes to be made from the control panel (control switches) so as to eliminate the necessity of making adjustment, recalibrating, and going into the protection system cabinets. We conclude that, during single-loop operation, the plant should be restricted to 70% of rated power, that the recirculation loop equalizer valves be maintained closed, and that the recirculation flow be controlled manually by the operator, i.e., that automatic control of flow not be permitted.

We find that the proposed modifications to the RBM setpoints and the APRM scram trip settings as presented by the Boston Edison Company in its submittals for single-loop operation satisfy the requirements of EICSB Branch Technical Position 12 of the Standard Review Plan and comply with the single failure criterion.

Our detailed evaluation of single-loop operation for Pilgrim, Unit 1 is enclosed.



D. G. Eisenhut, Assistant Director  
for Operational Technology  
Division of Operating Reactors

Enclosure:  
As stated

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