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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 43 TO FACILITY OPERATING LICENSE NO. DPR-50

METROPOLITAN EDISON COMPANY

JERSEY CENTRAL POWER AND LIGHT COMPANY
AND
PENNSYLVANIA ELECTRIC COMPANY

THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 1

DOCKET NO. 50-289

Introduction

By letter dated January 27, 1978, as supplemented by letter dated July 17, 1978, Metropolitan Edison Company (Met Ed) requested amendment of Facility Operating License No. DPR-50 for Three Mile Island Nuclear Station, Unit No. 1 (TMI-1). The requested change would revise the Technical Specifications for TMI-1 by increasing the volume requirements of the boric acid mix tank, the reclaimed boric acid storage tank, and the borated water storage tank.

Background

The current Technical Specifications require at least the equivalent of 550 cu. ft. of 8700 parts per million (ppm) boric acid solution in the boric acid mix tank or the reclaimed boric acid storage tank whenever the reactor is critical. These volumes were calculated without considering the highest worth control rod assembly (CRA) stuck out of the core, contrary to the Bases of Specification 3.2. Recent investigation and analysis revealed that the volume requirement is insufficient to assure a 1% delta k/k shutdown margin for all zero power temperature conditions above cold shutdown at the worst time in core life with a stuck CRA and after xenon decay.

Discussion and Evaluation

The proposed change would increase the minimum required volume of boric acid solution in the boric acid mix tank and the reclaimed boric acid storage tank from 550 to 800 cubic feet. This change would provide

sufficient quantity of boric acid to assure a 1% delta k/k shutdown margin at cold shutdown at the worst time of core life with the highest worth CRA fully withdrawn and no credit for xenon. Since the revised volume requirements include a consideration of the highest worth CRA stuck out of the core, we find the proposed change would resolve the deficiency in the current Technical Specifications, would not result in a decrease in the safety margin and is acceptable.

In addition to this change, the basis for the specification would be revised to reflect the corrected calculations by indicating a minimum required volume of 26,500 gallons of 2270 ppm boric acid solution in the borated water storage tank. The volume presently stated in the basis is 16,000 gallons at a concentration of 2270 ppm. This change does not involve a safety consideration since specification 3.3.1.1 requires a minimum of 350,000 gallons of water having a minimum concentration of 2270 ppm boron in the borated water storage tank, which greatly exceeds both the current and proposed volumes.

Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: August 23, 1978