



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 92 TO FACILITY OPERATING LICENSE NO. DPR-63
NJAGARA MOHAWK POWER CORPORATION
NINE MILE POINT NUCLEAR STATION, UNIT NO. 1
DOCKET NO. 50-220

1.0 INTRODUCTION

By application dated October 30, 1986, as supplemented January 15, 1987, Niagara Mohawk Power Corporation (the licensee) requested an amendment to Appendix A of Facility Operating License No. DPR-63 for the Nine Mile Point Nuclear Station, Unit No. 1 (NMP-1). The amendment would modify Figures 2.1.1 and 3.1.7.aa in the Appendix A Technical Specifications (TS) regarding the limiting relationships between core power and core flow rate. Specifically, the changes to Figures 2.1.1 and 3.1.7aa would reflect changes to: (1) reduce a restriction on the reactor operating range, and (2) provide consistency with the current reload analyses for the present Nine Mile Point Unit 1 core configuration and parameters. In support of the proposed modification, the licensee provided General Electric Company (GE) Report, NEDC-31126, "General Electric Boiling Water Reactor Extended Load Line Limit Analysis for Nine Mile Point 1 Cycle 9" dated February 1986.

2.0 EVALUATION

Presently, the NMP-1 TS limit full power operation to the flow range from 91% to 100%. The Extended Load Line Limit Analysis (ELLLA) provides the basis for reactor operation in the region bounded by the 108% average power range monitor (APRM) rod block line (See Figure 2.1.1) and the licensee power. The present Power/Flow line was reviewed and approved in the Staff's Safety Evaluation supporting Amendment No. 36 to Facility Operating License No. DPR-63 dated March 29, 1980. The requested change affects a relatively small triangular area of the Power/Flow Map for core power between 85 and 100% and core flow between 61 and 91%. A GE safety analysis (NEDC-31126, February 1986) was performed to demonstrate that the consequences of transients and accidents initiated from within the expanded ELLLA region are bounded by the consequences of the same events initiated from the licensing basis condition for NMP-1, Cycle 9. Consideration was also given to overpressure protection for compliance with the American Society of Mechanical Engineers (ASME) Pressure Vessel Code, and reactor core thermal-hydraulic stability.

Principal considerations in the review of the expanded ELLLA for NMP-1 include:

1. The slope of the rod block line has been previously reviewed and approved for NMP-1 (Amendment No. 36, March 28, 1980) and is generally applicable.

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2. The limiting transients initiated within the proposed expanded ELLLA region are still limiting at 100% power/100% flow (See Table 3-2 of GE NEDC-31126, February 1986). Therefore, no change in the present operating limit minimum critical power ratio (MCPR) of 1.40 is required.
3. The effect of less than rated flow on loss-of-coolant accident analyses has been generically reviewed and approved for referencing (NRC Letter to GE dated May 19, 1978). No changes to the present maximum average planar linear heat generation rate (MAPLHGR) limits are required.
4. The calculated peak pressure for main steam isolation valve closure without scram increases by 1 psi which results in a value 46 psi below the allowable 1375 psi ASME Pressure Vessel Code limit for overpressure protection and thus remains acceptable.
5. The proposed extended ELLLA region is beyond the region of thermal-hydraulic stability (THS) concerns; therefore the THS requirements identified in NRC Generic Letter 86-02 (January 23, 1986) remain satisfied.

Based on our review of the anticipated changes in core behavior, we conclude that the proposed changes correctly address the proposed extended operating region and are, therefore, acceptable. The revised figures reflect the new flow-biased scram and APRM rod block settings and the limiting power flow line. No changes to the present TS operating limit Minimum Critical Power Ratio or MAPLHGR limits are required.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to 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. 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 issued a proposed finding that this 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 nor environmental assessment need be prepared in connection with the issuance of this amendment.

4.0 CONCLUSION

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 the issuance of this amendment will not be inimical to the common defense and security nor to the health and safety of the public.

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Dated: March 24, 1987

