



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENTS NOS. 150 AND 87 TO

FACILITY OPERATING LICENSES DPR-57 AND NPF-5

GEORGIA POWER COMPANY
OGLETHORPE POWER CORPORATION
MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA
CITY OF DALTON, GEORGIA

EDWIN I. HATCH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-321 AND 50-366

I. INTRODUCTION

By letter dated October 8, 1987 (Reference 1), Georgia Power Company (the licensee) requested a number of changes to the Technical Specifications (TS) for the Edwin I. Hatch Nuclear Plant, Units 1 and 2. The proposed changes would: (1) revise the Average Planar Linear Heat Generation Rate (APLHGR) limits for General Electric BP8x8R and P8x8R fuel types in Units 1 and 2; (2) add an APLHGR limit curve for fuel types BP8 DRB 301L and P8 DRB 301L in Units 1 and 2; (3) decrease the minimum flow rate surveillance requirement for the core spray systems on Units 1 and 2, and increase the maximum response time surveillance requirements for the core spray system and for the residual heat removal (RHR) system (when operating in the low pressure coolant injection (LPCI) mode) for Unit 2; and (4) revise the Bases for the TS of both Units 1 and 2 to reflect the use of the SAFER/GESTR-LOCA application methodology, and delete APLHGR limits for fuel types that will no longer be used in the Hatch units.

Changes 1 and 3 result from revised LOCA calculations for the Hatch units, reported in NEDC-31376P (Reference 2), which were made using the NRC-approved SAFER/GESTR-LOCA application methodology. This methodology is described in References 3, 4 and 5, and NRC approval of this methodology is documented in References 6, 7 and 8. Change 2 is necessary to allow the licensee to use a different type of fuel in the Hatch units, while change 4 results from a need to document the Basis for the revised LOCA calculations and from a decision not to use certain fuel types for which APLHGR limits are now specified in the TS. These changes are discussed individually below.

II. EVALUATION

1. Change 1 - Revise the APLHGR limits for General Electric BP8x8R and P8x8R fuel types for Units 1 and 2. The existing TS limits on APLHGR as a function of exposure were calculated based upon the General Electric SAFE/REFLOOD methodology and were set based upon ECCS/LOCA limits using that conservative methodology. As a result, some of the APLHGR limits were restrictive as compared to the mechanical design capability of the

fuel. The newer ECCS/LOCA calculations based upon the SAFER/GESTR-LOCA methodology use more realistic plant parameters. The results of these calculations (Reference 2) demonstrate that Hatch Units 1 and 2 remain in conformance with the acceptance criteria of 10 CFR 50.46 and Appendix K and that substantial margin to the ECCS/LOCA limits still exists when the APLHGR limits are set based upon the mechanical design capability of the fuel. Accordingly, the licensee proposes to adjust the APLHGR limits to take advantage of the fuel design capability.

The calculations reported in NEDC-31376P (Reference 2) are based upon the General Electric SAFER/GESTR-LOCA methodology which has previously been approved by the NRC staff (References 6, 7 and 8). The Hatch specific calculations use more realistic, but suitably conservative, plant parameters, and demonstrate that substantial margin still exists to the ECCS/LOCA limits of 10 CFR 50.46 and Appendix K when the APLHGR limits are adjusted to the design capability of the fuel. Accordingly, we find the proposed revisions to the APLHGR limits acceptable.

2. Change 2 - Add APLHGR limits for fuel types BP8 DRB 301L and P8 DRB 301L to the TS for Units 1 and 2.

This is a newer type of fuel that has not previously been used in the Hatch units. The proposed APLHGR limits were established based upon the fuel thermal mechanical design capabilities. As discussed in Change 1, above, use of these APLHGR limits results in ECCS/LOCA calculations showing conformance to the acceptance criteria of 10 CFR 50.46 and Appendix K. Accordingly, we find these proposed limits acceptable.

3. Change 3 - Revise certain TS surveillance requirements for Hatch Units 1 and 2 as follows: (1) decrease the required core spray system flowrate for both Units 1 and 2 from 4,625 gpm to 4,250 gpm; (2) increase the ECCS maximum response time for the Unit 2 core spray system from 27 seconds to 34 seconds; and (3) increase the ECCS maximum response time for the Unit 2 LPCI mode of RHR from 40 seconds to 64 seconds.

The proposed relaxations in core spray pump flowrates and in the ECCS response times are consistent with the assumptions used in NEDC-31376P (Reference 2). The calculations using these relaxed parameters demonstrated that the Hatch units still will be in conformance with the acceptance criteria of 10 CFR 50.46 and Appendix K. No plant safety functions, other than LOCA mitigation, are performed by the core spray pumps or the LPCI mode of RHR. Therefore, changes to the surveillance requirements for this equipment would not impact other plant safety considerations. No modifications to the core spray system or to the PCI mode of RHR would be made as a result of these changes, but the licensee would gain flexibility in operation and in the purchasing of qualified replacement components.

Since the proposed revised flow rates and response times are consistent with the assumptions used in the new ECCS/LOCA calculations which are in conformance with the acceptance criteria of 10 CFR 50.46 and Appendix K, and since these revisions would not impact other plant safety functions, we find the proposed changes acceptable.

4. Change 4 - Revise the Bases for the TS for Units 1 and 2 to reflect the use of the SAFER/GESTR-LOCA methodology, and delete APLHGR limit curves for fuel types that will no longer be used in the Hatch Units.

Since the design basis LOCA considerations for Hatch Units 1 and 2 will now be based upon calculations resulting from the SAFER/GESTR-LOCA methodology, as documented in NEDC-31376P (Reference 2), it is appropriate that the TS Bases sections reflect the use of this methodology. These changes are, therefore, acceptable.

The licensee plans no further use of any 7x7 fuel, any non-prepressurized fuel, or of the BP8 DRB 284LA and P8 DRB 284LA fuel. Accordingly, the licensee proposes to delete the APLHGR limit curves for these fuel types from the TS for both Units 1 and 2. This is an administrative change only and is acceptable.

III. ENVIRONMENTAL CONSIDERATION

These amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there should be no significant increase in individual or cumulative occupational radiation. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendments meet 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 the amendments.

IV. CONCLUSION

The Commission made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register (52 FR 44244) on November 18, 1987, and consulted with the state of Georgia. No public comments were received, and the state of Georgia did not have any comments.

We have 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 the amendments will not be inimical to the common defense and security or to the health and safety of the public.

REFERENCES

1. Letter from J. P. O'Reilly, GPC, to U. S. Nuclear Regulatory Commission, dated October 8, 1987.

2. "Edwin I. Hatch Nuclear Plant, Units 1 and 2, SAFER/GESTR-LOCA Loss of Coolant Accident Analysis," NEDE - 31376P (Proprietary), December 1986.
3. "The GESTR-LOCA and SAFER Models for the Evaluation of the Loss of Coolant Accident," NEDE-23785-1-P (Proprietary); Volume 1, "GESTR/LOCA - A Model for the Prediction of Fuel Rod Thermal Performance," December 1981.
4. "The GESTR-LOCA and SAFER Models for the Evaluation of the Loss of Coolant Accident," NEDE-23785-1-P (Proprietary); Volume 2, "SAFER - Long Term Inventory Model for BWR Loss-of-Coolant Analysis," December 1981.
5. "The GESTR-LOCA and SAFER Models for the Evaluation of the Loss of Coolant Accident," NEDE-23785-1-P (Proprietary); Volume 3, "SAFER/GESTR Application Methodology," March 23, 1984.
6. U. S. Nuclear Regulatory Commission, "Safety Evaluation of the General Electric Company Topical Report, NEDE-23785-1, Volume 1 - GESTR/LOCA, A Model for the Prediction of Fuel Rod Thermal Performance," September 1983, report approved November 2, 1983.
7. U. S. Nuclear Regulatory Commission, "Safety Evaluation Report on the SAFER Code," July 12, 1983.
8. Letter, C. O. Thomas (NRC) to J. F. Quirk (GE), "Acceptance of Referencing of Licensing Topical Report NEDE-23785 Revision 1, Volume III, 'The GESTR-LOCA and SAFER Models for the Evaluation of the Loss of Coolant Accident,'" June 1, 1984.

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AMENDMENT NO. 150 TO FACILITY OPERATING LICENSE DPR-57, EDWIN I. HATCH, UNITS 1 & 2
AMENDMENT NO. 87 TO FACILITY OPERATING LICENSE NPF-05, EDWIN I. HATCH, UNITS 1 & 2

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