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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 80 TO FACILITY OPERATING LICENSE NPF-9

AND AMENDMENT NO. 61 TO FACILITY OPERATING LICENSE NPF-17

DUKE POWER COMPANY

DOCKET NOS. 50-369 AND 50-370

McGUIRE NUCLEAR STATION, UNITS 1 AND 2

INTRODUCTION

By letter dated February 5, 1988, Duke Power Company (the licensee) proposed amendments to increase the minimum volume of borated water required by McGuire Technical Specifications (TS) 3.1.2.5 and 3.1.2.6 to be maintained in the Boric Acid Storage System during Modes 5 and 6 and Modes 1, 2, 3 and 4, respectively.

EVALUATION

The present McGuire TS 3.1.2.6, "Reactivity Control Systems-Borated Water Source-Operating," which applies to Modes 1, 2, 3 and 4, specifies as part of its limiting conditions for operation that the Boric Acid Storage System contain a minimum borated water volume of 19,500 gallons. Similarly, TS 3.1.2.5 "Reactivity Control Systems-Borated Water Source-Shutdown," presently specifies for Modes 5 and 6 a minimum contained borated water volume in this System of 5100 gallons. As noted in associated TS Bases 3/4.1.2, these values are based on boration capability requirements to provide a shutdown margin from expected operating conditions of 1.3% delta k/k after xenon decay and cooldown to 200 degrees-F (16,321 gallons of 7000 ppm borated water), and a shutdown margin of 1% delta k/k after xenon decay and cooldown from 200 degrees-F to 140 degrees-F (2000 gallons of 7000 ppm borated water), to ensure that negative reactivity control is available during each mode of facility operation. These current technical specifications reflect a minimum usable level (i.e., zero percent level) in the Unit 1 and 2 Boric Acid Tanks corresponding to the outlet pipe centerline. The outlet pipe is nominally 4 inches in diameter with a centerline located 6 inches above the bottom of the tank. Six inches of unusable tank level corresponds to approximately 3100 gallons of unusable volume. Therefore, 3100 + 2000 = 5100 gallons and 3100 + 16,321 = 19,421 gallons. This is conservatively rounded up to 19,500 gallons.

The licensee has recently discovered that the highest point for the piping associated with the Boric Acid Tanks is higher than the piping tap on the tank. The minimum usable level for the Boric Acid Tanks should be at the top of the outlet pipe, rather than the pipe centerline. The new zero percent level of the tank occurs at 8 inches above the bottom of the tank (i.e., at the top of the outlet pipe), which corresponds to an unusable volume of about 4132 gallons. This means that, in order to satisfy the existing

boration capability requirements, the present minimum values in TS 3.1.2.5 and 3.1.2.6 should be increased. Specifically, TS 3.1.2.5 should require minimum tank levels of 4132 + 2000 = 6132 gallons, and TS 3.1.2.6 should require 4132 + 16,321 = 20,453 gallons.

The NRC staff has reviewed the proposed changes and finds that they appropriately correct the present non-conservative values by substituting more restrictive (i.e., increased) borated water volumes. The revised values restore the boration capability to that which will satisfy the originally intended shutdown margins. Therefore, the staff concludes that the changes enhance safety and are acceptable.

ENVIRONMENTAL CONSIDERATION

These amendments involve changes to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. 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 is no significant increase in individual or cumulative occupational exposure. The NRC staff has made a determination 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 these amendments.

CONCLUSION

The Commission made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register (53 FR 7590) on March 9, 1988. The Commission consulted with the state of North Carolina. No public comments were received, and the state of North Carolina 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 these amendments will not be inimical to the common defense and security or to the health and safety of the public.

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Dated: April 11, 1988