



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 44 TO FACILITY OPERATING LICENSE NPF-35
AND AMENDMENT NO. 37 TO FACILITY OPERATING LICENSE NPF-52

DUKE POWER COMPANY, ET AL.

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-413 AND 50-414

INTRODUCTION

By letters dated March 15, August 7, and November 8, 1985, April 14, and September 18, 1986, March 16 and August 11, 1987, and April 7, 1988, Duke Power Company (the licensee) proposed certain changes to the Technical Specifications (TS) for Catawba, Units 1 and 2, which would increase the interval for surveillance of the ice condenser lower inlet doors. Catawba TS 4.6.5.3.1b. requires surveillance for 25% of the doors every 6 months. The doors tested at each surveillance must be chosen so that all of the doors will have been tested after 24 months at Catawba. The licensee's proposed changes would require testing/inspection of all the doors every 18 months.

The March 16 and August 11, 1987, and April 7, 1988, submittals clarified certain aspects of the original request. The substance of the changes noticed in the Federal Register and the proposed no significant hazards determination were not affected by these clarifications.

EVALUATION

The licensee's proposed changes will add conservatism to the test frequency for Catawba because testing 25% of the doors every 6 months results in a span of 24 months between tests for any one door. The proposed surveillance interval would allow a maximum of 18 months between the tests for any one door. Therefore, the proposed surveillance interval is at least as conservative as the current surveillance intervals, on an individual door basis.

The staff has also considered the overall effect of the change in surveillance interval on the assurance of continued operability of the lower inlet doors as a system as discussed below.

The primary purpose of the surveillance in question is to determine that the lower inlet doors are capable of opening properly when required during a LOCA or other high-energy line break so that steam released in the lower containment compartment may enter the ice condenser compartment and be condensed by the ice inside. The lower inlet doors are equipped with springs that keep them closed during normal operation. The spring torque is set based on this normal operation function and at this low torque the doors will open rapidly in

response to a lower compartment pressure increase during a line break. The spring torque aids in preventing maldistribution of flow through the 24 pairs of lower inlet doors during a small line break accident when the doors would only open partially in order to assure equal flow through all door pairs. The surveillance in question requires that various measurements be made of door spring torque, in order to ensure that they can perform the above safety function.

The licensee provided the following information concerning door reliability. As of September 1986, there had been 612 individual door inspections at Catawba, Units 1 and 2. Six tests resulted in unacceptable results, although, upon retest with no modification, adjustment, or repair to the doors, each door passed. The licensee has attributed at least five of the initial failures to inexperience with the use of the test equipment by the test personnel.

From the above information, the staff finds that the doors have generally proven to be highly reliable. However, given that the licensee's proposal would lengthen the interval between the testing of any door (rather than a particular door) from 6 months to 18 months, the staff requested the licensee to address long-term performance of the door hinges and related hardware considering exposure to the ice condenser atmosphere for longer intervals between testing. By letter dated August 11, 1987, the licensee responded by indicating that corrosion has been considered in the detailed design of the ice condenser components. The low temperature (10°F-20°F) and low absolute humidity of the ice condenser atmosphere results in negligible corrosion of uncoated carbon steel. Nevertheless, protective coating (e.g., galvanization) and low corrosion materials such as stainless steel have been used in the ice condenser. The licensee concluded that the performance of the ice condenser materials of construction are not impaired by long-term exposure to the ice condenser environment.

On the basis of its review, the staff finds that the proposed surveillance interval is more conservative than the current interval. Furthermore, the intent of the surveillance for ensuring operability of the doors is not affected by the proposed changes. Therefore, the staff concludes that the proposed changes to TS 4.6.5.3.1b. for Catawba Units 1 and 2, to increase the surveillance interval to 18 months for 100% of the ice condenser doors, 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 and changes in 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 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 (51 FR 36087) on October 8, 1986. The Commission consulted with the state of South Carolina. No public comments were received, and the state of South 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: May 9, 1988