



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

SAFETY EVALUATION REPORT

RELATED TO AMENDMENT NO. 36 TO FACILITY OPERATING LICENSE NPF-9,

AMENDMENT NO. 17 TO FACILITY OPERATING LICENSE NPF-17

AND EXEMPTION FROM 10 CFR PART 50, APPENDIX J

DUKE POWER COMPANY

INTRODUCTION

By letter dated August 2, 1983, the licensee proposed certain changes to the facility Technical Specifications. This SER evaluates five of the proposed changes, concerning: 1) ice condenser inlet door surveillance; 2) containment air lock surveillance, 3) containment integrity, 4) bypass leakage; and 5) the distributed ignition system. The staff's evaluation of these proposed changes is presented herein.

EVALUATION

1) Ice condenser inlet door surveillance

The proposed changes would increase the surveillance interval for verifying that the ice condenser inlet doors can be opened and closed properly with the specified torque. The proposed changes would also increase the size of the sample required to be tested during each surveillance.

The surveillance interval would be changed from 6 months (3 months during the first year) to 9 months. Since this testing cannot be performed during unit operation, the existing specification requires a unit outage every 6 months to perform this surveillance. Changing the interval to 9 months would allow this testing to coincide with the outage to weigh ice baskets per Technical Specification 4.6.5.1.b.

It is also proposed that the sample size for verifying the "door opening torque" and "door closing torque" be increased from 25% to 50%. By testing a larger sample of doors, the change would result in each door being tested more frequently -- at least once per 18 months instead of 24 months under the existing specification -- despite the increased surveillance interval.

Justification for the increased surveillance interval is provided by the surveillance history at McGuire. The inlet door surveillance has been performed 10 times over a 2-year period on Unit 1 with no failures. It has also been performed one time on Unit 2 with no failures. This provides substantial confidence that the inlet doors would not develop problems during the proposed 9-month surveillance interval.

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One reason for the excellent surveillance history is a design change made to the door seals to prevent the doors from freezing closed. The old seal design, used at other plants, allowed condensation to collect at the seals and freeze the doors closed. The solution which was implemented at McGuire before initial startup was to redesign the door seals to prevent condensation from collecting.

The staff concludes, therefore, that the proposed changes to the Technical Specifications concerning ice condenser inlet door surveillance are acceptable.

2) Containment air lock surveillance

Technical Specification 4.6.1.3.b for the facility currently requires overall containment air lock leakage tests to be performed "... if opened when CONTAINMENT INTEGRITY was not required..." The proposed change would be to require the overall air lock leakage test to be performed "...when maintenance has been performed on the air lock that could affect the air lock sealing capability." This proposed change would require an exemption from the requirements of Appendix J to 10 CFR 50.

Paragraph III.D.2(b)(ii) of Appendix J states:

"Air locks opened during periods when containment integrity is not required by the plant's Technical Specifications shall be tested at the end of such periods at not less than P_a ."

Whenever the plant is in cold shutdown (Mode 5) or refueling (Mode 6), containment integrity is not required. However, if an air lock is opened during Modes 5 or 6, paragraph III.D.2(b)(ii) of Appendix J requires that an overall air lock leakage test at not less than P_a be conducted prior to plant heatup and startup (i.e., entering Mode 4). The existing air lock doors are so designed that a full pressure, i.e., (14.8 psig), test of an entire air lock can only be performed after strong backs (structural bracing) have been installed on the inner door. Strong backs are needed since the pressure exerted on the inner door during the test is in a direction opposite to that of the accident pressure direction. Installing strongbacks, performing the test, and removing strongbacks requires at least 6 hours per air lock (there are 2 air locks) during which access through the air lock is prohibited.

If the periodic 6-month test of paragraph III.D.2(b)(i) of Appendix J and the test required by paragraph III.D.2(b)(iii) of Appendix J are current, no maintenance has been performed on the air lock, and the air lock is properly sealed, there should be no reason to expect the air lock to leak excessively just because it has been opened in Mode 5 or Mode 6.

Accordingly, the staff concludes that the licensee's proposed approach of relying on the seal leakage test of paragraph III.D.2(b)(iii) of appendix J is acceptable when no maintenance has been performed on an air lock. Whenever maintenance has been performed on an air lock, the test requirement of paragraph III.D.2(b)(ii) of Appendix J must still be met by the licensee.

Therefore, an exemption from this requirement [10 CFR 50, Appendix J, paragraph III.D.2(b)(ii)] is justified and acceptable for McGuire, Units 1 and 2, and the licensee's proposed changes to the plant Technical Specifications concerning this subject are acceptable.

3) Containment Integrity

Specification 4.6.1.1.a of the T.S. requires that primary containment integrity be demonstrated at least once per 31 days by verifying that all penetrations not capable of being closed by operable containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions. However, valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed or otherwise secured in the closed position are excluded. These penetrations are verified closed during each cold shutdown except that such verification need not be performed more often than once per 92 days. The proposed change would revise the footnote to Specification 4.6.1.1.a to also exclude locked valves, blind flanges, and deactivated automatic valves located inside the annulus from the monthly surveillance requirements of 4.6.1.1.a. Surveillance would be performed during cold shutdown as required for components inside containment.

The purpose of the proposed change is to avoid the need for access to the annulus during operation to reduce radiation exposure to personnel. Portions of the annulus are considered high radiation areas during operation. This exception was previously approved by the staff for the Unit 1 Technical Specifications; however, it was inadvertently omitted when developing the combined Technical Specifications for both Units 1 and 2.

The proposed amendments would involve less frequent surveillance of the status of penetrations in the annulus. Because these penetrations are locked, sealed, or otherwise secured in the closed position, they can only be repositioned by personnel error. This is unlikely because access to the annulus during operation is restricted except for essential tasks. Therefore, the proposed change is not likely to have a significant effect on safety, and will reduce personnel exposure to radiation.

Therefore, for the reasons given above, the staff finds the proposed change to the Technical Specifications to be acceptable.

4) Bypass leakage

The proposed changes would include several additional penetrations in Table 3.6-1, Secondary Containment Bypass Leakage Paths. These penetrations were inadvertently omitted from the existing table due to administrative errors. All of these penetrations are currently included in the licensee's periodic surveillance program.

Because the proposed changes represent appropriate safety requirements and would involve requirements which are clearly more restrictive than the existing requirements, the staff finds the proposed changes to the Technical Specifications to be acceptable.

5) Distributed Ignition System

The proposed changes would revise the Limiting Condition for Operation and the Surveillance Requirements for the Primary Containment Distributed Ignition System to clarify that the system consists of two redundant trains. This is necessary to be consistent with the Action section of the Technical Specification.

Surveillance Requirement 4.6.4.3.a currently refers to 66 igniters total and requires the distributed ignition system to be demonstrated operable at least once per 92 days by energizing the power supply breakers and verifying that at least 64 of 66 igniters are energized. There are actually two trains of 33 igniters each. Because the Action Section implies that one train can be considered operable while the other train is inoperable, operability should be defined on a "per train" basis. The licensee proposes to change the wording to require that each train of the system be demonstrated operable with at least 32 of the 33 igniters energized when the power supply breakers are energized. The proposed changes would result in a more restrictive definition of operability when two igniters on the same train are inoperable; this condition would be acceptable under the existing specification but not under the proposed specification.

The proposed changes would clarify and correct the Technical Specifications, making them consistent with one another; the staff finds the proposed changes to the Technical Specifications to be acceptable.

ENVIRONMENTAL CONSIDERATION

The amendments involve a change in use of a facility component 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 radiation exposure. The Commission has previously issued a proposed finding that these amendments involve no significant hazards consideration, and there have been no public comments on such findings. Accordingly, the amendments

meet the eligibility criteria for categorical exclusion set forth in 10 CFR Section 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 amendment.

Pursuant to 10 CFR 51.32 the Commission has determined that the issuance of the exemption will have no significant impact on the environment (49 FR 38425).

CONCLUSION

The Commission made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register (48 FR 49717) on October 27, 1983, and 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 found that granting the proposed exemption from the requirements of Appendix J as discussed above is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest.

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: October 5, 1984.

October 5, 1984

AMENDMENT NO. 36 TO FACILITY OPERATING LICENSE NPF-9 - McGUIRE NUCLEAR STATION, UNIT 1
AMENDMENT NO. 17 TO FACILITY OPERATING LICENSE NPF-17 - McGUIRE NUCLEAR STATION, UNIT 2

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