



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

November 1, 1985

Docket Nos: 50-369
and 50-370

Mr. H. B. Tucker, Vice President
Nuclear Production Department
Duke Power Company
422 South Church Street
Charlotte, North Carolina 28242

Dear Mr. Tucker:

Subject: Issuance of Amendment No. 47 to Facility Operating License
NPF-9 and Amendment No. 28 to Facility Operating License
NPF-17 - McGuire Nuclear Station, Units 1 and 2

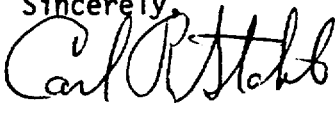
The Nuclear Regulatory Commission has issued the enclosed Amendment No.47 to Facility Operating License NPF-9 and Amendment No.28 to Facility Operating License NPF-17 for the McGuire Nuclear Station, Units 1 and 2. These amendments are in response to your applications dated November 12, 1984, and January 30, 1985.

The amendments change the action statement for the limiting condition for operation and the surveillance requirements for Technical Specifications 3/4.5.1, Cold Leg Injection Accumulators, and 3/4.5.1.2, Upper Head Injection Accumulator System. Your letter of January 30, 1985, also requested changes to Technical Specifications with respect to the UHI membrane located between the water-filled and nitrogen bearing accumulators. Our review of this part of the request is pending receipt of additional information. Therefore, this portion of the request is not included in these amendments.

A copy of the related safety evaluation supporting Amendment No.47 to Facility Operating License NPF-9 and Amendment No. 28 to Facility Operating License NPF-17 is enclosed.

Notice of issuance will be included in the Commission's next bimonthly Federal Register notice.


Sincerely,


Elinor G. Adensam, Chief
Licensing Branch No. 4
Division of Licensing

Enclosures:

1. Amendment No. 47 to NPF-9
2. Amendment No. 28 to NPF-17
3. Safety Evaluation

cc w/encl:
See next page

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November 1, 1985

AMENDMENT NO. 47 TO FACILITY OPERATING LICENSE NPF-9 - MCGUIRE NUCLEAR STATION, UNIT 1
AMENDMENT NO. 28 TO FACILITY OPERATING LICENSE NPF-17 - MCGUIRE NUCLEAR STATION, UNIT 2

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McGuire Nuclear Station

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

DUKE POWER COMPANY

DOCKET NO. 50-369

McGUIRE NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 47
License No. NPF-9

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The applications for amendment to the McGuire Nuclear Station, Unit 1 (the facility) Facility Operating License No. NPF-9 filed by the Duke Power Company (licensee) dated November 12, 1984, and January 30, 1985, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations as set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission;
 - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
 - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public;
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachments to this license amendment and paragraph 2.C.(2) of Facility Operating License No. NPF-9 is hereby amended to read as follows:

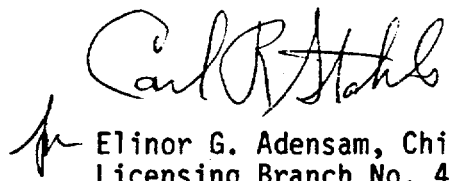
(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 47, are hereby incorporated into this license.

The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


Elinor G. Adensam, Chief
Licensing Branch No. 4
Division of Licensing

Attachment:
Technical Specification Changes

Date of Issuance: November 1, 1985



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

DUKE POWER COMPANY

DOCKET NO. 50-370

McGUIRE NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 28
License No. NPF-17

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The applications for amendment to the McGuire Nuclear Station, Unit 2 (the facility) Facility Operating License No. NPF-17 filed by the Duke Power Company (licensee) dated November 12, 1984, and January 30, 1985, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations as set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission;
 - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
 - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public;
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachments to this license amendment and paragraph 2.C.(2) of Facility Operating License No. NPF-17 is hereby amended to read as follows:


(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 28, are hereby incorporated into this license.

The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


Elinor G. Adensam, Chief
Licensing Branch No. 4
Division of Licensing

Attachment:
Technical Specification Changes

Date of Issuance: November 1, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 47

FACILITY OPERATING LICENSE NO. NPF-9

DOCKET NO. 50-369

AND

TO LICENSE AMENDMENT NO. 28

FACILITY OPERATING LICENSE NO. NPF-17

DOCKET NO. 50-370

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain a vertical line indicating the area of change.

Amended
Page

3/4 5-1
3/4 5-2
3/4 5-3
3/4 5-4

3/4.5 EMERGENCY CORE COOLING SYSTEMS

3/4.5.1 ACCUMULATORS

COLD LEG INJECTION

LIMITING CONDITION FOR OPERATION

3.5.1.1 Each cold leg injection accumulator shall be OPERABLE with:

- a. The isolation valve open,
- b. A contained borated water volume of between 8022 and 8256 gallons,
- c. A boron concentration of between 1900 and 2100 ppm,
- d. A nitrogen cover-pressure of between 430 and 484 psig, and
- e. A water level and pressure channel OPERABLE.

APPLICABILITY: MODES 1, 2, and 3*.

ACTION:

- a. With one accumulator inoperable, except as a result of a closed isolation valve, restore the inoperable accumulator to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to less than 1000 psig within the following 6 hours.
- b. With one accumulator inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in at least HOT STANDBY within 6 hours and reduce pressurizer pressure to less than 1000 psig within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.5.1.1.1 Each cold leg injection accumulator shall be demonstrated OPERABLE:

- a. At least once per 12 hours by:
 - 1) Verifying the contained borated water volume and nitrogen cover-pressure in the tanks, and
 - 2) Verifying that each cold leg injection accumulator isolation valve is open.

*Pressurizer pressure above 1000 psig.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b. At least once per 31 days and within 6 hours after each solution volume increase of greater than or equal to 1% of tank volume by verifying the boron concentration of the accumulator solution;
- c. At least once per 31 days when the RCS pressure is above 2000 psig by verifying that power to the isolation valve operator is disconnected by removal of the breaker from the circuit.

4.5.1.1.2 Each cold leg injection accumulator water level and pressure channel shall be demonstrated OPERABLE:

- a. At least once per 31 days by the performance of an ANALOG CHANNEL OPERATIONAL TEST, and
- b. At least once per 18 months by the performance of a CHANNEL CALIBRATION.

EMERGENCY CORE COOLING SYSTEMS

UPPER HEAD INJECTION

LIMITING CONDITION FOR OPERATION

- 3.5.1.2 Each Upper Head Injection Accumulator System shall be OPERABLE with:
- a. The isolation valves open,
 - b. The water-filled accumulator containing a minimum of 1850 cubic feet of borated water having a concentration of between 1900 and 2100 ppm of boron, and
 - c. The nitrogen bearing accumulator pressurized to between 1206 and 1264 psig.

APPLICABILITY: MODES 1, 2 and 3.*

ACTION:

- a. With the Upper Head Injection Accumulator System inoperable, except as a result of a closed isolation valve(s), restore the Upper Head Injection Accumulator System to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to less than 1900 psig within the following 6 hours.
- b. With the Upper Head Injection Accumulator System inoperable due to the isolation valve(s) being closed, either immediately open the isolation valve(s) or be in at least HOT STANDBY within 6 hours and reduce pressurizer pressure to less than 1900 psig within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.5.1.2 Each Upper Head Injection Accumulator System shall be demonstrated OPERABLE:

- a. At least once per 12 hours by:
 - 1) Verifying the contained borated water volume and nitrogen pressure in the accumulators, and
 - 2) Verifying that each accumulator isolation valve is open.

*Pressurizer Pressure above 1900 psig.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b. At least once per 31 days and within 6 hours after each solution volume increase of greater than or equal to 1% of tank volume by verifying the boron concentration of the solution in the water-filled accumulator;
- c. At least once per 18 months by:
 - 1) Verifying that each accumulator isolation valve closes automatically when an actual or simulated water level signal of 76.25 ± 3.3 inches above the bottom inside edge of the water-filled accumulator exists. If actual water level is used, then the accumulator shall be at atmospheric pressure.
 - 2) Verifying that the total dissolved nitrogen and air in the water-filled accumulator is less than 80 scf per 1800 cubic feet of water (equivalent to 5×10^{-5} pounds nitrogen per pounds water).
- d. At least once per 5 years by replacing the membrane installed between the water-filled and nitrogen bearing accumulators and verifying that the removed membrane burst at a differential pressure of 40 ± 10 psi.



UNITED STATES
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WASHINGTON, D. C. 20555

SAFETY EVALUATION REPORT

RELATED TO AMENDMENT NO. 47 TO FACILITY OPERATING LICENSE NPF-9

AND TO AMENDMENT NO. 28 TO FACILITY OPERATING LICENSE NPF-17

DUKE POWER COMPANY

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

INTRODUCTION

By letters dated November 12, 1984, and January 30, 1985, the licensee proposed amendments to License Nos. NPF-9 and NPF-17 which would change the action statements for the limiting condition for operation and the surveillance requirements for Technical Specifications 3/4.5.1, Cold Leg Injection Accumulators, and 3/4.5.1.2, Upper Head Injection Accumulator System (UHI).

For the Cold Leg Injection Accumulator, these amendments replace the requirement to be in hot shutdown (specified in the action statement when one accumulator is inoperable for reasons other than a closed isolation valve) with a requirement to reduce pressurizer pressure to less than 1000 psig. The requirement to be in hot standby within "1 hour and in HOT SHUTDOWN within the following 12 hours" (specified in the action statement when one accumulator is inoperable due to the isolation valve being closed) is changed to require that the reactor be in hot standby within "6 hours and that pressurizer pressure be reduced to less than 1000 psig within the following 6 hours." Surveillance requirement 4.5.1.1.d, which requires periodic testing of the automatic opening feature of the accumulator isolation valves, is deleted.

For the UHI, these amendments replace the requirement to be in hot shutdown (specified in ACTION (a) which applies when the UHI is inoperable for reasons other than a closed isolation valve) with a requirement to reduce pressurizer pressure to less than 1900 psig. The requirement to be in "HOT STANDBY within 1 hour and be in HOT SHUTDOWN within the next 12 hours" (specified in ACTION (b) which applies when the UHI is inoperable due to a closed isolation valve) is changed to require that the reactor be in "at least HOT STANDBY within 6 hours and reduce pressurizer pressure to less than 1900 psig within the following 6 hours." Surveillance Specification 4.5.1.2.c(1) is clarified to more accurately reflect the type of testing used to verify automatic closure of each UHI accumulator isolation valve (i.e., to reflect use of "an actual or simulated water level signal") and to clarify that "if actual water level is used, then the accumulator should be at atmospheric pressure."

EVALUATION

Cold Leg Injection Accumulator

Technical Specification 3.5.1.1 requires each cold leg injection accumulator to

be operable with the isolation valve open when pressurizer pressure is above 1000 psig. The existing Specification 3.5.1.1 allows 1 hour to place the reactor in hot standby when accumulator inoperability is due to a closed isolation valve, but allows 6 hours when accumulator inoperability is not due to a closed isolation valve. This is inconsistent because the potential causes for accumulator inoperability other than a closed accumulator isolation valve (e.g., total loss of nitrogen gas pressure) have a safety significance comparable to that of a closed accumulator isolation valve. The 1 hour requirement is unnecessarily conservative since the inoperability of the accumulators for up to 6 hours was previously determined to pose negligible adverse safety consequences. Accordingly, the staff finds that the change from 1 hour to 6 hours to be in hot standby when inoperability is due to a closed isolation valve is equally acceptable.

The other change to Specification 3.5.1.1 by these amendments requires that pressurizer pressure be lowered below 1000 psig within 6 hours instead of placing the reactor in hot shutdown. Plant operating procedures require that the accumulators be isolated below a reactor coolant system pressure of 1000 psig in order to prevent inadvertent injection during planned depressurization (i.e., shutdown). In support of these operating procedures, licensee's analysis of a large break LOCA during a plant cooldown has previously demonstrated (see Supplement 2 to SER, Section 6.3.4) that adequate protection is provided without the cold leg injection accumulators if reactor coolant system pressure at the time of the accident was at or below 1000 psig. Thus, because accumulators serve no safety function below 1000 psig, the staff finds that the change has no adverse impact on safety and is acceptable.

The accumulator isolation valves must be open for the accumulators to accomplish their safety (injection) function. The design of the control circuit for the motor-operated accumulator isolation valve as accepted by the staff in SER Section 7.3.3 protected against inadvertent closure of the valve by an automatic opening feature. Although the valve is normally open when RCS pressure is above 1000 psig, it receives a safety injection signal to override any bypass feature and cause automatic opening should the valve be closed. In accordance with the licensee's request, these amendments delete Surveillance Specification 4.5.1.1.1.d which requires periodic testing of the automatic opening feature of the accumulator isolation valves because changes in operating procedures negate the need for (and function of) such a feature (and hence the need for its testing). The licensee's operating procedure for unit startup requires that the valves be opened before exceeding 1000 psig, and that after opening, power to the valve operators is to be disconnected by removal of the breaker from the circuit. Hence, the possibility of inadvertent closure is eliminated by removal of the power source at all times except for those brief periods during planned startups and shutdowns when a deliberate change in valve position is required. The possibility of prolonged operation following inadvertent failure to open the isolation valve during repressurization of the reactor coolant system in accordance with the licensee's startup procedures is eliminated by Surveillance Specification 4.5.1.1.1a(2) which is not changed by these amendments and which requires verification at least once per 12 hours that each accumulator isolation valve is open. The staff finds that elimination

of the periodic test requirement where the function to be tested is no longer relied upon, and where the 12-hour surveillance requirement is retained, does not have a significant adverse effect on safety and is acceptable.

Upper Head Injection System

Technical Specification 3.5.1.2 requires each UHI to be operable with the isolation valves open when pressurizer pressure is above 1900 psig (i.e., for Modes 1, 2, and 3, but for Mode 3 only above 1900 psig). Prior to these amendments, the existing Specification 3.5.1.2 allowed 1 hour to place the reactor in hot standby when UHI was inoperable due to a closed isolation valve (i.e., for ACTION (b)), but allowed 7 hours when UHI inoperability was not due to a closed isolation valve (i.e., for ACTION (a)). This was inconsistent because the potential causes for UHI inoperability other than a closed isolation valve (e.g., total loss of the gas-bearing accumulator pressure) have a safety significance comparable to that of a closed isolation valve. The 1 hour requirement was unnecessarily conservative since the inoperability of UHI for up to 7 hours was previously determined to pose negligible adverse safety consequences. Therefore, the staff finds that the change from 1 to 6 hours to be in hot standby when UHI inoperability is due to a closed isolation valve is also acceptable.

The other changes to ACTION (a) and ACTION (b) implemented by these amendments permit the pressurizer pressure to be reduced below 1900 psig in operational Mode 3 (hot standby) instead of placing the reactor in hot shutdown. For ACTION (b), this change introduces an additional conservatism in that the change requires that this pressure reduction be achieved within 12 hours, whereas the previous ACTION (b) provided a total period of 13 hours for the plant to be in hot shutdown. Plant operating procedures require that the UHI isolation valves be closed below a reactor coolant system pressure of 1900 psig in order to prevent inadvertent injection during planned depressurization (i.e., shutdown). In support of these operating procedures, licensee's analysis of a large break LOCA during a plant cooldown has previously demonstrated (see Supplement 2 to SER, Section 6.3.4) that adequate protection is provided without UHI injection if reactor coolant system pressure at the time of the accident was at or below 1900 psig. Thus, because UHI serves no safety function below 1900 psig, the staff finds that the change does not adversely affect safety and is acceptable.

The previous Surveillance Specification 4.5.1.2.c required that each UHI accumulator isolation valve be periodically verified to close automatically when the water level was 76.25 ± 3.3 inches above the bottom inside edge of the water filled accumulator with atmospheric pressure in the accumulator. The specification required clarification because in its previous form it could be interpreted to mean that the actual tank water level was to be reduced to the setpoint in order to verify that each accumulator isolation valve closes. Such a limited interpretation was not intended; use of simulated signals to test safety systems in which an instrument reaching a setpoint actuates a device is an industry-wide practice which is also acceptable to the Commission as evidenced by its acceptance for other safety related systems involved with water level (e.g., high pressurizer water level and low steam

generator water level). These amendments, therefore, modify Surveillance Specification 4.5.1.2.C to clarify that simulated signals may be used to verify automatic accumulator isolation valve closure. This change is administrative and has no adverse safety implications.

ENVIRONMENTAL CONSIDERATION

These amendments involve changes in 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 radiation exposure. The Commission has previously issued a proposed finding that these 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 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 these amendments.

CONCLUSION

The Commission made proposed determinations that the amendments involve no significant hazards consideration which were published in the Federal Register (50 FR 37078 and 37079) on September 11, 1985, 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 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.

Principal Contributors: D. S. Hood, Licensing Branch No. 4, DL
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Dated: November 1, 1985