

Docket Nos.: 50-369
and 50-370

September 17, 1986

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. 62 to Facility Operating License NPF-9
and Amendment No. 43 to Facility Operating License NPF-17 - McGuire
Nuclear Station, Units 1 and 2

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 62 to Facility Operating License NPF-9 and Amendment No. 43 to Facility Operating License NPF-17 for the McGuire Nuclear Station, Units 1 and 2. These amendments are in response to your applications for Technical Specifications changes dated August 30, 1985, regarding turbine overspeed protection; and portions of your applications for Technical Specifications changes dated January 10, 1986 regarding the minimum number of reactor coolant loops required for hot standby, and July 22, 1985, regarding turbine trip/reactor trip system outage times.

The amendments change the Technical Specifications to authorize use of McGuire's "Turbine Overspeed Reliability Assurance Program" for demonstrating operability of the turbine overspeed protection system, to increase the time during which an inoperable turbine stop valve instrument channel may be maintained in an un-tripped condition, and to increase the number of reactor coolant loops required to periodically be verified in operation in the hot standby mode.

A copy of the related safety evaluation supporting Amendment No. 62 to Facility Operating License NPF-9 and Amendment No. 43 to Facility Operating License NPF-17 is enclosed.

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

Sincerely,

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Darl Hood, Project Manager
PWR Project Directorate #4
Division of PWR Licensing-A

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Enclosures:

1. Amendment No. 62 to NPF-9
2. Amendment No. 43 to NPF-17
3. Safety Evaluation

cc w/enclosures: See next page

DISTRIBUTION:

See attached page

PWR#4/DPWR-A
MDuncan/mac
09/10 /86

DSH
PWR#4/DPWR-A
DHood
09/10 /86

DN, cut
PWR#4/DPWR-A
BJYoungblood
09/17 /86

Mr. H. B. Tucker
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McGuire Nuclear Station

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DATED: September 17, 1986

AMENDMENT NO. 62 TO FACILITY OPERATING LICENSE NPF-9 - McGuire Nuclear Station, Unit 1
AMENDMENT NO. 43 TO FACILITY OPERATING LICENSE NPF-17 - McGuire Nuclear Station, Unit 2

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Docket File 50-369/370

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JTsao



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. 62
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 (the licensee) dated August 30, 1985, as supplemented December 13, 1985; July 22, 1985, as supplemented June 12, 1986; and January 10, 1986, as supplemented May 12, 1986, 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 amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - 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.

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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. 43
License No. NPF-17

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment to the McGuire Nuclear Station, Unit 2 (the facility) Facility Operating License No. NPF-17 filed by the Duke Power Company (the licensee) dated August 30, 1985, as supplemented December 13, 1985; July 22, 1985, as supplemented June 12, 1986; and January 10, 1986, as supplemented May 12, 1986, 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 amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - 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. 43, are hereby incorporated into the 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

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Darl Hood, Project Manager
PWR Project Directorate #4
Division of PWR Licensing-A

Attachment:
Technical Specification
Changes

Date of Issuance: September 17, 1986

PWR#4/DPWR-A
MBuncan/rad
09/10/86

DSH
PWR#4/DPWR-A
DHood
09/10/86

OGC/BETH
30 HNS
09/16/86

BNW
PWR#4/DPWR-A
BJYoungblood
09/17/86

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w/changes
added to
set

ATTACHMENT TO LICENSE AMENDMENT NO. 62

FACILITY OPERATING LICENSE NO. NPF-9

DOCKET NO. 50-369

AND

TO LICENSE AMENDMENT NO. 43

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 vertical lines indicating the areas of change.

Amended
Page

3/4 3-8
3/4 3-79
3/4 4-2
B 3/4 3-5

TABLE 3.3-1 (Continued)

ACTION STATEMENTS (Continued)

- ACTION 9 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, be in at least HOT STANDBY within 6 hours; however, one channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.1.1, provided the other channel is OPERABLE.
- ACTION 10 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or open the Reactor trip breakers within the next hour.
- ACTION 11 - With the number of OPERABLE channels less than the Total Number of Channels, operation may continue provided the inoperable channels are placed in the tripped condition within 6 hours.

INSTRUMENTATION

3/4.3.4 TURBINE OVERSPEED PROTECTION

LIMITING CONDITION FOR OPERATION

3.3.4 At least one Turbine Overspeed Protection System shall be OPERABLE.

APPLICABILITY: MODE 1.

ACTION:

- a. With one stop valve or one governor valve per high pressure turbine steam lead inoperable and/or with one reheat stop valve or one reheat intercept valve per low pressure turbine steam lead inoperable, restore the inoperable valve(s) to OPERABLE status within 72 hours, or close at least one valve in the affected steam lead(s) or isolate the turbine from the steam supply within the next 6 hours.
- b. With the above required Turbine Overspeed Protection System otherwise inoperable, within 6 hours isolate the turbine from the steam supply.

SURVEILLANCE REQUIREMENTS

4.3.4.1 The provisions of Specification 4.0.4 are not applicable.

4.3.4.2 To assure operability of the above required Turbine Overspeed protection System, an inservice inspection of the various components of this system are carried out in accordance with the "Turbine Overspeed Reliability Assurance Program."

HOT STANDBY

LIMITING CONDITION FOR OPERATION

3.4.1.2 At least three of the reactor coolant loops listed below shall be OPERABLE and at least two of these reactor coolant loops shall be in operation:*

- a. Reactor Coolant Loop A and its associated steam generator and reactor coolant pump,
- b. Reactor Coolant Loop B and its associated steam generator and reactor coolant pump,
- c. Reactor Coolant Loop C and its associated steam generator and reactor coolant pump, and
- d. Reactor Coolant Loop D and its associated steam generator and reactor coolant pump.

APPLICABILITY: MODE 3

ACTION:

- a. With less than the above required reactor coolant loops OPERABLE, restore the required loops to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours.
- b. With only one reactor coolant loop in operation, restore at least two loops to operation within 72 hours or open the Reactor Trip System breakers.
- c. With no reactor coolant loop in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required reactor coolant loop to operation.

SURVEILLANCE REQUIREMENTS

4.4.1.2.1 At least the above required reactor coolant pumps, if not in operation, shall be determined OPERABLE once per 7 days by verifying correct breaker alignments and indicated power availability.

4.4.1.2.2 The required steam generators shall be determined OPERABLE by verifying secondary side water level to be greater than or equal to 12% at least once per 12 hours.

4.4.1.2.3 At least two reactor coolant loops shall be verified in operation and circulating reactor coolant at least once per 12 hours.

*All reactor coolant pumps may be de-energized for up to 1 hour provided: (1) no operations are permitted that would cause dilution of the Reactor Coolant System boron concentration, and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

BASES

3/4.3.3.10 LOOSE-PART DETECTION INSTRUMENTATION

The OPERABILITY of the loose-part detection instrumentation ensures that sufficient capability is available to detect loose metallic parts in the reactor system and avoid or mitigate damage to reactor system components. The allowable out-of-service times and Surveillance Requirements are consistent with the recommendations of Regulatory Guide 1.133, "Loose-Part Detection Program for the Primary System of Light-Water-Cooled Reactors," May 1981.

3/4.3.4 TURBINE OVERSPEED PROTECTION

This specification is provided to ensure that the turbine overspeed protection instrumentation and the turbine speed control valves are OPERABLE and will protect the turbine from excessive overspeed. Protection from turbine excessive overspeed is required since excessive overspeed of the turbine could generate potentially damaging missiles. All Category I structures except the new fuel vault at McGuire, are designed to withstand effects of turbine missiles without any adverse impact on the safety related equipment housed inside (FSAR Section 3.5.2.7 and 10.2.3). To assure protection against turbine overspeed a "Turbine Overspeed Reliability Program" is implemented. Tests and inspections associated with this program will be performed in accordance with station procedures, maintenance work requests and/or outage work schedules as appropriate. All deviations from the program or deficiencies identified through the specified maintenance, calibration or testing activities are evaluated by Duke Power Company to determine if operability of the system has been affected and appropriate action taken such as correcting the deviation or deficiency, performing compensatory action, or removing the turbine from service.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 62 TO FACILITY OPERATING LICENSE NPF-9
AND AMENDMENT NO. 43 TO FACILITY OPERATING LICENSE NPF-17

DUKE POWER COMPANY

DOCKET NOS. 50-369 AND 50-370

McGUIRE NUCLEAR STATION, UNITS 1 AND 2

INTRODUCTION

The NRC staff has reviewed certain requests by Duke Power Company (the licensee) for license amendments to change Technical Specifications (TS) for McGuire Nuclear Station, Units 1 and 2. The changes would (1) authorize use of McGuire's "Turbine Overspeed Reliability Assurance Program" for demonstrating operability of the turbine overspeed protection system, (2) increase the time during which an inoperable turbine stop valve instrument channel may be maintained in an untripped condition, and (3) increase the number of reactor coolant loops required to periodically be verified in operation in the hot standby mode. Our evaluation of these three changes follows.

EVALUATION

Turbine Overspeed Protection

By letter dated August 30, 1985, the licensee proposed changes to delete the surveillance requirements in McGuire TS 3/4.3.4, "Turbine Overspeed Protection". The changes would revise the surveillance requirements of TS 4.4.3.2 by deleting the existing requirements for demonstrating the Turbine Overspeed Protection System to be operable, and substituting a requirement that operability of this system be assured by inservice inspection of the various system components carried out in accordance with a "Turbine Overspeed Reliability Assurance Program" (TORAP). Associated TS Bases 3/4.3.4 "Turbine Overspeed Protection" would also be revised to reflect implementation of TORAP.

The McGuire TORAP is a comprehensive program for testing, calibration, maintenance and inspection of the Turbine Overspeed Protection System. The overall intent of this program is to maintain the reliability and operability of the Turbine Overspeed Protection System to minimize the potential for turbine missile generation. The Program is described as follows:

- (A) The McGuire testing program addresses the turbine valves and the turbine overspeed protection controls. The testing program is performed during each turbine startup, unless tested within the previous 7 days, including startup after each refueling outage. This program also includes a test of all the turbine valves on a 4 months interval;

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- (B) Calibration of the electrical and mechanical overspeed trip devices is performed during each refueling outage or following major maintenance on the turbine or the overspeed protection control systems; and
- (C) The turbine valve maintenance program includes inspection and maintenance of all throttle, governor, reheat stop and intercept valves every 40 months. This work consists of removing valve internals and cleaning, inspecting, and repairing valve components.

In September, 1982, Westinghouse published reports, WCAP-10161 (Proprietary) and WCAP-10162 (Nonproprietary) entitled "Evaluation of Impact of Reduced Testing of Turbine Valves." The reports present a study of reduced testing of turbine valves at the Farley Nuclear Plant. The study concluded that turbine valve operability and reliability are not significantly affected by lengthening the valve testing interval. The study also concluded that good operating experience and well planned maintenance, calibration, testing and inspection programs provide a reasonable bases to increase the valve testing interval at Farley. Since early 1983, Westinghouse has formally recommended a monthly valve testing interval to its customers who have similar turbines. As indicated in the SER accompanying Farley Unit 1 license Amendment 41 and Farley Unit 2 license Amendment 32, the staff has concurred that the valve testing interval could be increased without significantly affecting the probability of turbine missile generation.

In its application for amendments dated August 30, 1985, and a supplemental letter of December 13, 1985, Duke Power Company provided a study that shows McGuire has the same or very similar equipment in the Turbine Overspeed Protection System as Farley. Hence, Duke Power Company, has used the Farley TORAP to establish a similar TORAP at McGuire. The Farley TORAP is described in a letter from Alabama Power Company to the NRC dated October 6, 1983 and a supplemental letter dated November 28, 1983.

The staff has evaluated these McGuire submittals using insights and experiences that were gained from its review of Farley. The staff review primarily focused upon three considerations; (A) whether components in the Turbine Overspeed Protection System at McGuire and Farley Nuclear Stations are indeed similar; (B) whether McGuire and Farley have the same TORAP; and (C) whether the McGuire TORAP follows the intent of the surveillance requirements which would be replaced in the revised TS 4.3.4.2.

In its supplemental letter of December 13, 1985, the licensee showed that the major turbine valves and overspeed trip devices of the Turbine Overspeed Protection System are identical at McGuire and Farley. Major system components i.e., throttle valves, governor valves, intercept valves, reheat stop valves and mechanical overspeed trip device have the same style numbers (part numbers) at McGuire and Farley. The style numbers are listed in the Westinghouse Steam Turbine Division Interchangeability Data Southeastern Area Utilities book. The electronic overspeed protection circuits are also identical because both Farley and McGuire have the same Westinghouse digital electro-hydraulic control systems. Because of similarity in the system components at both plants, Duke Power Company extrapolated the results of the Farley study to McGuire. The

only difference between McGuire and Farley TORAP regards the valve maintenance intervals. McGuire's TORAP requires that all major turbine valves be inspected every 40 months; whereas Farley's TORAP requires that all throttle and governor valves be inspected every 39 months and all reheat stop and intercept valves every 60 months. Moreover, Duke Power Company proposed the same maintenance periods on the throttle valves, governor valves and overspeed devices (electrical and mechanical) as Farley but proposed more stringent maintenance periods on the intercept and reheat stop valves (40 month inspections vs. 60 month). As part of its program, Duke Power Company will be disassembling and inspecting all turbine valves on a 40 month basis instead of just one of each type valve every 40 months as required by TS prior to these amendments. This increased inspection and maintenance schedule increases the reliability of the Overspeed Protection System and is, therefore, acceptable.

The staff finds that the McGuire TORAP will accomplish the purpose of the surveillance requirements and, therefore, that replacing the surveillance requirements in TS 4.3.4.2 with the TORAP is acceptable.

In its letter of August 30, 1985, the licensee notes that TORAP will be the subject of on-going review and evaluation such that changes in scope and schedule may occur periodically. The licensee states that this program and any subsequent changes will be reviewed and approved in accordance with its administrative procedures (i.e., any related changes to specified maintenance, calibration or testing activities will be evaluated by Duke Power Company to determine if operability of the turbine overspeed protection system has been affected and appropriate action taken). Because subsequent changes to TORAP can affect the potential for, and effects of, turbine missile generation as analyzed and discussed in McGuire FSAR Sections 3.5.2.7 and 10.2.3, such changes are also subject to the requirements of 10 CFR 50.59. On the basis of the licensee's statement and the Commission's regulations, the staff concludes that subsequent changes to TORAP will be appropriately evaluated by the licensee and, if made without prior Commission approval, are not likely to involve an unreviewed safety question.

Turbine Trip/Reactor Trip System Outage Times

On February 21, 1985, the NRC staff issued a letter containing its Safety Evaluation Report (SER) on the Westinghouse Technical Specification (TS) Optimization Program for increased surveillance intervals and out-of-service times for testing and maintenance of the Reactor Trip System. The Optimization Program proposal was set forth in WCAP-10271, "Evaluation of Surveillance Frequencies and Out-of-Service-Times for the Reactor Protection Instrumentation System," and Supplement 1 thereto.

In response to licensee's request by letter of July 22, 1985, the Commission issued license Amendments 54 for McGuire Unit 1 and 35 for McGuire Unit 2 to authorize several of the changes from the Optimization Program proposal. However, approval of one of the requested changes was deferred pending further consideration by the licensee. By letter dated June 12, 1986, the licensee addressed this change. The change would modify Action Statement 11 of TS Table 3.3-1 so as to increase from one to six hours the time during which an inoperable turbine stop valve instrument channel associated with the turbine trip/reactor trip system may be maintained in an untripped condition.

We find this change to be consistent with those which we reviewed and accepted for the Optimization Program proposal. Therefore, the staff finds this change acceptable on the basis set forth in the staff's February 21, 1985, SER.

Reactor Coolant Loops for Hot Standby

These amendments change Technical Specification 4.4.1.2.3 to require that at least two, rather than at least one, reactor coolant loops shall periodically be verified in operation and circulating reactor coolant when the plant is operating in the hot standby mode. (A reactor coolant "loop" includes its primary piping, steam generator and reactor coolant pump). In response to the licensee's letter of January 10, 1986, the NRC issued license Amendment 56 on Unit 1 and license Amendment 37 on Unit 2 to change the Limiting Condition for Operation associated with Technical Specification 3.4.1.2, "Reactor Coolant System - Hot Standby," by increasing by one the number of reactor coolant loops required to be operable and in operation for hot standby. In its safety evaluation for Amendments 56 and 37, the Commission noted that the change to the more restrictive condition was necessary to ensure that sufficient coolant flow is available when operating in hot standby so that the DNB design bases are met for all operating conditions and postulated accidents in hot standby.

By letter dated May 12, 1986, the licensee noted that its January 10, 1986, letter had also requested a corresponding change to Surveillance Specification 4.4.1.2.3 which had not been reflected in Amendments 56 and 37. Thus, upon issuance of Amendments 56 and 37, the surveillance requirement was inconsistent (i.e., less restrictive) with its associated limiting condition for operation. The present amendments correct this inconsistency.

The change to increase by one the number of reactor coolant loops required periodically to be verified in operation and circulating reactor coolant in the hot standby mode represents a more restrictive surveillance requirement in the Technical Specifications. It has no adverse impact upon safety and is, therefore, acceptable.

ENVIRONMENTAL CONSIDERATION

These amendments involve changes to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes in surveillance requirements. We have 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 radiation exposure. The NRC staff has made a proposed 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 proposed determinations that the amendments involve no significant hazards considerations which were published in the Federal Register (50 FR 51622) on December 18, 1985, (51 FR 22234) on June 18, 1986, and (51 FR 27283) on July 30, 1986, 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: Darl S. Hood, PWR #4 PWR Licensing-A
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Dated: September 17, 1986