



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

March 5, 1986

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.51 to Facility Operating License NPF-9
and Amendment No.32 to Facility Operating License NPF-17 -
McGuire Nuclear Station, Units 1 and 2

The Nuclear Regulatory Commission has issued the enclosed Amendment No.51 to Facility Operating License NPF-9 and Amendment No.32 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 20 and November 6, 1985, and January 28, 1986 regarding containment integrated leakage rate; April 25, 1985, regarding QA record retention requirements; and September 6, 1985, regarding doghouse water level instrumentation.

The amendments change the Technical Specifications to increase by 50% the allowed containment overall integrated leakage rate, provide for retention of records of QA activities in accordance with ANSI N45.2.9-1974, and add requirements for the existing doghouse water level instrumentation. The amendments are effective as of their dates of issuance.

The staff's acceptance of the changes regarding the retention period for records of QA activities required by the QA Manual is based, in part, upon your commitment by letter of August 23, 1985, to retain data and information used in post-trip reviews until and subject to a definitive resolution of the retention period for such records on a generic basis and with the appropriate ANSI Committee. Pending such resolution and associated NRC staff acceptance, our position remains as stated in our letter of June 21, 1985 (i.e., that records for data and information used in post-trip reviews shall be retained for the life of the operating license). We understand you will take administrative action to ensure that these amendments are interpreted by station personnel consistent with your commitment.

With respect to doghouse water level instrumentation, we acknowledge your commitment by letter of September 6, 1985, to include appropriate information in the 1985 update of the McGuire FSAR.

8603130183 860305
PDR ADOCK 05000369
P PDR

MAR 05 1986

Mr. H. B. Tucker

- 2 -

A copy of the related safety evaluation supporting Amendment No. 51 to Facility Operating License NPF-9 and Amendment No. 32 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,

Original signed by:
D. Hood

for

B. J. Youngblood, Director
PWR Project Directorate #4
Division of PWR Licensing-A

Enclosures:

- 1. Amendment No. 51 to NPF-9
- 2. Amendment No. 32 to NPF-17
- 3. Safety Evaluation

cc w/enclosures: See next page

DSH
PWR#4/DPWR-A
DHood/mac
02/11/86

MD
PWR#4/DPWR-A
MDuncan
02/12/86

DSH
PWR#4/DPWR-A
BJYoungblood
02/11/86

MAR 05 1986

Mr. H. B. Tucker
Duke Power Company

McGuire Nuclear Station

cc:

Mr. A. Carr
Duke Power Company
P. O. Box 33189
422 South Church Street
Charlotte, North Carolina 28242

Dr. John M. Barry
Department of Environmental Health
Mecklenburg County
1200 Blythe Boulevard
Charlotte, North Carolina 28203

Mr. F. J. Twogood
Power Systems Division
Westinghouse Electric Corp.
P. O. Box 355
Pittsburgh, Pennsylvania 15230

County Manager of Mecklenburg County
720 East Fourth Street
Charlotte, North Carolina 28202

Mr. Robert Gill
Duke Power Company
Nuclear Production Department
P. O. Box 33189
Charlotte, North Carolina 28242

Chairman, North Carolina Utilities
Commission
Dobbs Building
430 North Salisbury Street
Raleigh, North Carolina 27602

J. Michael McGarry, III, Esq.
Bishop, Liberman, Cook, Purcell
and Reynolds
1200 Seventeenth Street, N.W.
Washington, D. C. 20036

Mr. Dayne H. Brown, Chief
Radiation Protection Branch
Division of Facility Services
Department of Human Resources
P.O. Box 12200
Raleigh, North Carolina 27605

Senior Resident Inspector
c/o U.S. Nuclear Regulatory Commission
Route 4, Box 529
Huntersville, North Carolina 28078

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission,
101 Marietta Street, N.W., Suite 2900
Atlanta, Georgia 30323

L. L. Williams
Operating Plants Projects
Regional Manager
Westinghouse Electric Corporation - R&D 701
P. O. Box 2728
Pittsburgh, Pennsylvania 15230



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. 51
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 April 25, 1985, September 6, 1985 and August 20, 1985, as supplemented November 6, 1985, and January 28, 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 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. 51, are hereby incorporated into the license.

8603130186 860305
PDR ADDCK 05000369
PDR

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

Original signed by:
D. Hood

for

B. J. Youngblood, Director
PWR Project Directorate #4
Division of PWR Licensing-A

Attachment:
Technical Specification Changes

Date of Issuance: March 5, 1986

DSH
PWR#4/DPWR-A
DHood/mac
02/ *u* /86

MD
PWR#4/DPWR-A
MDuncan
02/12/86

GE
OELD *GE*
GE Johnson
02/26/86

DSH
PWR#4/DPWR-A
BJYoungblood
02/11/86

Done - SH
change to
letter and
see Envir. Consid.
section
check w/ SECY for
comments/petitions
2/28



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. 32
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 April 25, 1985, September 6, 1985 and August 20, 1985, as supplemented November 6, 1985, and January 28, 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;
 - 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. 32, are hereby incorporated into the license.

The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:
D. Hood

for

B. J. Youngblood, Director
PWR Project Directorate #4
Division of PWR Licensing-A

Attachment:
Appendix A Technical
Specification Changes

Date of Issuance: March 5, 1986

DSH
PWR#4/DPWR-A
DHood/mac
2/11/85

MD
PWR#4/DPWR-A
MDuncan
2/12/85

OELD
GE Johnson
2/26/85
w/ change to
letter v
SER/Env. Cons.
check w/ Secy for
Comments/Petitions 2/28

DSH/m
PWR#4/DPWR-A
BJYoungblood
2/11/85

ATTACHMENT TO LICENSE AMENDMENT NO. 51

FACILITY OPERATING LICENSE NO. NPF-9

DOCKET NO. 50-369

AND

TO LICENSE AMENDMENT NO. 32

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. The corresponding overleaf pages are also provided to maintain document completeness.

<u>Amended Page</u>	<u>Overleaf Page</u>
3/4 3-20	3/4 3-19
3/4 3-24a (new page)	
3/4 3-27	
3/4 3-36	3/4 3-35
3/4 3-37	3/4 3-38
3/4 6-2	
6-23	

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
4. Steam Line Isolation					
a. Manual Initiation					
1) System	2	1	2	1, 2, 3	22
2) Individual	1/steam line	1/steam line	1/operating steam line	1, 2, 3	23
b. Automatic Actuation Logic and Actuation Relays	2	1	2	1, 2, 3	21
c. Containment Pressure-- High-High	4	2	3	1, 2, 3	16
d. Negative Steam Line Pressure Rate - High					
Four Loops Operating	3/steam line	2/steam line in any steam line	2/steam line	3 ^{##}	15*
Three Loops Operating	(**)	(**)	(**)	(**)	(**)
e. Steam Line Pressure - Low					
Four Loops Operating	3/steam line	2/steam line in any steam line	2/steam line	1, 2, 3 [#]	15*
Three Loops Operating	(**)	(**)	(**)	(**)	(**)

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
5. Turbine Trip & Feedwater Isolation					
a. Automatic Actuation Logic and Actuation Relay	2	1	2	1, 2	21
b. Steam Generator Water Level-- High-High	3/stm. gen.	2/stm. gen. in any operating stm gen.	2/stm. gen. in each operating stm. gen.	1, 2	15*
c. Doghouse Water Level (Feedwater Isolation Only)	3/train/Doghouse	2/train/Doghouse	2/train/Doghouse	1, 2	25*
6. Containment Pressure Control System					
a. Start Permissive	4/train	2/train	3/train	1, 2, 3, 4	19*
b. Termination	4/train	2/train	3/train	1, 2, 3, 4	19*

MCGUIRE - UNITS 1 and 2

3/4 3-20

Amendment No. 51 (Unit 1)
Amendment No. 32 (Unit 2)

ACTION 25 - With one of the two trains of doghouse water level instrumentation inoperable (less than the minimum required number of channels operable), restore the inoperable train to operable status in 72 hours. After 72 hours with one train inoperable, or within one hour with 2 trains inoperable, monitor doghouse water level in the affected doghouse continuously until both trains are restored to operable status.

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

<u>FUNCTIONAL UNIT</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUES</u>
4. Steam Line Isolation		
a. Manual Initiation	N.A.	N.A.
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.
c. Containment Pressure--High-High	≤ 2.9 psig	≤ 3.0 psig
d. Negative Steam Line Pressure Rate - High	≤ -100 psi/sec	≤ -120 psi/sec
e. Steam Line Pressure - Low	≥ 585 psig	≥ 565 psig
5. Turbine Trip and Feedwater Isolation		
a. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.
b. Steam Generator Water level--High-High (P-14)	≤ 82% of narrow range instrument span each steam generator	≤ 83% of narrow range instrument span each steam generator
c. Doghouse Water Level-High (Feedwater Isolation Only)	12"	13"
6. Containment Pressure Control System		
a. Start Permissive	≤ 0.25 psid	≤ 0.25 psid
b. Termination	≤ 0.25 psid	≤ 0.25 psid

McGUIRE - UNITS 1 and 2

3/4 3-27

Amendment No.51 (Unit 1)
Amendment No.32 (Unit 2)

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>	<u>TRIP ACTUATING DEVICE OPERATIONAL TEST</u>	<u>ACTUATION LOGIC TEST</u>	<u>MASTER RELAY TEST</u>	<u>SLAVE RELAY TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
3. Containment Isolation								
a. Phase "A" Isolation								
1) Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
2) Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
3) Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements.							
b. Phase "B" Isolation								
1) Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
2) Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
3) Containment Pressure-High-High	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
c. Purge and Exhaust Isolation								
1) Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
2) Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
3) Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements.							

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MASTER RELAY TEST	SLAVE RELAY TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
4. Steam Line Isolation								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3
c. Containment Pressure-- High-High	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
d. Negative Steam Line Pressure Rate-High	S	R	M	N.A.	N.A.	N.A.	N.A.	3
e. Steam Line Pressure--Low	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
5. Turbine Trip and Feedwater Isolation								
a. Automatic Actuation Logic and Actuation Relay	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2
b. Steam Generator Water Level-High-High (P-14)	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2
c. Doghouse Water Level-High (Feedwater Isolation Only)	S	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2
6. Containment Pressure Control System								
a. Start Permissive	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Termination	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4

McGUIRE - UNITS 1 & 2

3/4 3-36

Amendment No. 51 (Unit 1)
Amendment No. 32 (Unit 2)

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>	<u>TRIP ACTUATING DEVICE OPERATIONAL TEST</u>	<u>ACTUATION LOGIC TEST</u>	<u>MASTER RELAY TEST</u>	<u>SLAVE RELAY TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
7. Auxiliary Feedwater								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3
c. Steam Generator Water Level--Low-Low	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
d. Auxiliary Feedwater Suction Pressure-Low	N.A.	R	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3
e. Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements							
f. Station Blackout	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3
g. Trip of Main Feedwater Pumps	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2
8. Automatic Switchover to Recirculation								
RSWT Level	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
9. Loss of Power								
4 kV Emergency Bus Undervoltage-Grid Degraded Voltage	N.A.	R	N.A.	M	N.A.	N.A.	N.A.	1, 2, 3, 4

McGUIRE - UNITS 1 and 2

3/4 3-37

Amendment No.51 (Unit 1)
Amendment No.32 (Unit 2)

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>	<u>TRIP ACTUATING DEVICE OPERATIONAL TEST</u>	<u>ACTUATION LOGIC TEST</u>	<u>MASTER RELAY TEST</u>	<u>SLAVE RELAY TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
10. Engineered Safety Features Actuation System Interlocks								
a. Pressurizer Pressure, P-11	N.A.	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
b. Reactor Trip, P-4	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3
c. Low, Low T _{avg} , P-12	N.A.	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
d. Steam Generator Level, P-14	S	R	M	N.A.	M(1)	M(1)	Q	1, 2, 3

CONTAINMENT SYSTEMS

CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

3.6.1.2 Containment leakage rates shall be limited to:

- a. An overall integrated leakage rate of:
 - 1) Less than or equal to L_a , 0.30% by weight of the containment air per 24 hours at P_a , 14.8 psig, or
 - 2) Less than or equal to L_t , 0.14% by weight of the containment air per 24 hours at a reduced pressure of P_t , 7.4 psig.
- b. A combined leakage rate of less than $0.60 L_a$ for all penetrations and valves subject to Type B and C tests, when pressurized to P_a , and
- c. A combined bypass leakage rate of less than $0.07 L_a$ for all penetrations identified in Table 3.6-1 as secondary containment bypass leakage paths when pressurized to P_a .

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With (a) the measured overall integrated containment leakage rate exceeding $0.75 L_a$ or $0.75 L_t$, as applicable, or (b) the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding $0.60 L_a$, or (c) the combined bypass leakage rate exceeding $0.07 L_a$, restore the overall integrated leakage rate to less than $0.75 L_a$ or less than or equal to $0.75 L_t$, as applicable, and the combined leakage rate for all penetrations and valves subject to Type B and C tests to less than $0.60 L_a$, and the combined bypass leakage rate to less than $0.07 L_a$ prior to increasing the Reactor Coolant System temperature above 200°F .

SURVEILLANCE REQUIREMENTS

4.6.1.2 The containment leakage rates shall be demonstrated at the following test schedule and shall be determined in conformance with the criteria specified in Appendix J of 10 CFR 50 using the methods and provisions of ANSI N45.4-1972 or the mass-plot method:

ADMINISTRATIVE CONTROLS

RECORD RETENTION (Continued)

- g. Records of training and qualification for current members of the unit staff;
- h. Records of inservice inspections performed pursuant to these Technical Specifications;
- i. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59;
- j. Records of meetings of the NSRB and reports required by Specification 6.5.1.12;
- k. Records of the service lives of all snubbers listed in Tables 3.7-4a and 3.7-4b including the date at which the service life commences and associated installation and maintenance records;
- l. Records of secondary water sampling and water quality; and
- m. Records of analyses required by the Radiological Environmental Monitoring Program that would permit evaluation of the accuracy of the analysis at a later date. This should include procedures effective at specified times and QA records showing that these procedures were followed.

6.10.3 Records of quality assurance activities required by the QA Manual shall be retained for a period of time required by ANSI N45.2.9-1974.

6.11 RADIATION PROTECTION PROGRAM

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

6.12 HIGH RADIATION AREA

6.12.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) of 10 CFR 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP)*. Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

*Health Physics personnel or personnel escorted by Health Physics personnel shall be exempt from the RWP issuance requirement during the performance of their assigned radiation protection duties, provided they are otherwise following plant radiation protection procedures for entry into high radiation areas.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 51 TO FACILITY OPERATING LICENSE NPF-9
AND AMENDMENT NO. 32 TO FACILITY OPERATING LICENSE NPF-17
DUKE POWER COMPANY
McGUIRE NUCLEAR STATION, UNITS 1 AND 2

INTRODUCTION

By letters dated August 20, and November 6, 1985, and January 28, 1986, Duke Power Company (the licensee) proposed amendments to the operating licenses for McGuire Nuclear Station, Units 1 and 2, which would change the Technical Specifications 3.6.1.2 to increase by 50% the allowed containment overall integrated leakage rate. By letter dated April 25, 1985, the licensee proposed amendments, in part, to change Technical Specification 6.10 so as to provide for retention of records of QA activities in accordance with the retention periods specified in ANSI N45.2.9-1974, "Requirements for Collection, Storage, and Maintenance of Quality Assurance Records for Nuclear Power Plants." By letter dated September 6, 1985, the licensee proposed amendments to add requirements to the Technical Specifications for existing engineered safety features actuation instrumentation which detects accumulation of water in the doghouse and provides a feedwater isolation signal if a high doghouse water level (indicative of a feedwater line break) is reached. The NRC staff has evaluated these proposed amendments.

EVALUATION

1. Containment Integrated Leakage Rate

These amendments increase the containment overall integrated leakage rate in Technical Specification 3.6.1.2 from its previous L value of 0.20% per day to 0.30% per day. (L is as defined in Appendix J^a to 10 CFR 50, corresponding at McGuire to a containment pressure of 14.8 psig). The licensee's initial request of August 20, 1985, also proposed changes to L (also defined in Appendix J) which were subsequently withdrawn by letter dated January 28, 1986, and are not included in these amendments.

While this change would generally increase the doses estimated under accident conditions, the licensee has shown that by taking credit for the existing containment spray iodine removal system, the dose guidelines as specified in 10 CFR 100 and General Design Criterion-19 would not be exceeded. By its letter of August 20, 1985, the licensee provided revised radiation exposure calculations for a design basis LOCA using the methodology from Revision 1 of the Standard Review Plan (SRP), Section 6.5.2. SRP Section 6.5.2 recognizes that containment spray systems with boric acid spray solutions have been shown to be effective for removal of elemental and particulate iodine. This permits the licensee to take credit for the iodine removal

8603130188 860305
PDR ADOCK 05000369
PDR

effect of the boric acid which is contained in containment spray water for other reasons. Details of the analytical model and parameters used as input for these calculations are further identified by the licensee's letter of November 6, 1985. The revised analyses demonstrate for thyroid doses that the proposed 50% increase in the containment leakage rate is nearly offset by the effect of the spray system. Since noble gases are unaffected by containment sprays, the increased containment leakage rate results in increased whole body and skin doses. However, for the McGuire Nuclear Station, thyroid radiation exposure is the limiting criterion, and the licensee's calculations show that the whole body and skin doses remain well below the acceptance criteria in Appendix A of SRP Section 15.6.5 for offsite exposure (i.e., 10 CFR 100.11 values) and acceptance criteria in SRP 6.4 (i.e., GDC 19) for control room personnel. The previous and revised results calculated by the licensee and the appropriate criteria are:

<u>Onsite Dose (Rem)</u>			<u>Offsite Dose (Rem)</u>				
			<u>Exclusion Area</u>		<u>Low Population Zone</u>		
			<u>Boundary</u>		<u>Zone</u>		
			<u>Whole Body</u>	<u>Skin</u>	<u>Thyroid</u>	<u>Whole Body</u>	<u>Thyroid</u>
Current Values							
	0.2	4	26	3	198	0.6	65
Revised Values							
	0.3	6	19	4	208	0.7	51
Allowable Limits							
	5	30	30	25	300	25	300

In response to the licensee's request for amendments, the NRC staff reviewed the licensee's analyses, and also performed its own independent offsite LOCA dose analyses. Our analyses, like those by the licensee, used the standard assumptions as specified in Regulatory Guide 1.4 for the radiological source term. We assumed the spray water to be borated, but to contain no additive to bring the spray pH to a high elemental iodine removal capability as indicated in SRP 6.5.2. (This latter assumption is conservative since the system design does provide for spray pH control, and the licensee assumed a spray pH of 8.5 based upon Technical Specification 3/4.6.5.1). Using the

partition coefficient guidance of SRP 6.5.2, our independent assessment utilized a maximum partition coefficient for elemental iodine of 50 rather than the licensee's value of 5.5. The offsite doses we calculated for a containment leak rate of 0.3%/day are:

	<u>Whole Body</u> (Rem)	<u>Thyroid</u> (Rem)
Exclusion Area Boundary	3.5	223
Low Population Zone	0.5	33

We examined the difference between our calculated offsite doses and those by the licensee. We find the variations to result from differences in the analytical models (i.e., unlike the licensee's model, our model provides for differentiation between the duration for removal of elemental iodine and the duration for removal of particulate iodines), and from differences in input assumptions (i.e., differences assumed for frequency and duration of cycling of the containment annulus filtered ventilation exhaust system, and differences in assumed values for iodine removal coefficients stemming from spray pH assumptions discussed above). However, the differences in calculated results are somewhat academic because the results calculated by both the licensee and NRC are within allowable limits and are, therefore, acceptable.

For onsite doses, we examined the analyses and consequences of the increased containment leak rate on control room personnel as calculated by the licensee and concluded that the habitability systems for the shared control room are such that the doses meet the guidelines of GDC-19.

On the basis of our review and independent calculations, we find the licensee's revised analyses which reflect credit for the containment spray system to be consistent with SRP 6.5.2 and to result in doses within the guidelines of 10 CFR 100 and the requirements of GDC-19. The requested revision to Technical Specification 3.6.1.2 is, therefore, acceptable.

2. Records Retention

These amendments change the record retention period in Technical Specification 6.10 for records of quality assurance activities required by the QA Manual. Specification 6.10.2i previously required that these records be retained for the duration of the Operating License. The change substitutes a new Specification 6.10.3 requiring that these records be retained for the period specified by ANSI N45.2.9-1974, "Requirements for Collection, Storage, and Maintenance of Quality Assurance Records for Nuclear Power Plants."

ANSI N45.2.9-1974 provides a list of the various types of QA records and divides them into "Lifetime" and "Nonpermanent" categories for retention period purposes. For each record type in the "Nonpermanent" category, ANSI N45.2.9-1974 designates a specific minimum retention period ranging from 0 to 6 years. As stated in Regulatory Guide 1.88, the requirements and guidelines for collection, storage and maintenance of quality assurance records that are included in ANSI N45.2.9-1974 are acceptable to the NRC staff and

provide an adequate basis for complying with the pertinent quality assurance requirements for Appendix B to 10 CFR Part 50.

The change involves only the substitution of a more specific and more appropriate requirement for QA records retention pursuant to a standard accepted by the NRC staff. Because this substitution would not shorten the retention period for those types of QA records which the Commission has determined should be retained for the plant lifetime, and does appropriately recognize that some of the QA record types have limited significance and may be retained for lesser periods, the change has no adverse impact on safety and is, therefore, acceptable.

3. Doghouse Water Level Instrumentation

These amendments add limiting conditions for operation and surveillance requirements for existing engineered safety features actuation instrumentation which detects accumulation of water in the doghouse and provides a feedwater isolation signal if a high doghouse water level (indicative of a feedwater line break) is reached.

Technical Specification 3.3.2 requires, as a limiting condition for operation, that the engineered safety features actuation system instrumentation channels shown in Table 3.3-3 be operable, and that their trip setpoints be set consistent with values in Table 3.3-4. The change supplements Specification Table 3.3-4 to reflect the high doghouse water level trip setpoint (12") and associated allowable value (13"). Specification Table 3.3-3 is supplemented to reflect the total number of channels (3/train/doghouse), minimum channels operable (2/train/doghouse), and applicable modes (power operation and startup). The change to Table 3.3-3 also adds required action in the event of an inoperable train(s) (i.e., with one of the two trains of doghouse water level instrumentation inoperable (less than the minimum required number of channels operable), restore the inoperable train to operable status in 72 hours. After 72 hours with one train inoperable, or within one hour with 2 trains inoperable, monitor doghouse water level in the affected doghouse continuously until both trains are restored to operable status.) The change also supplements the surveillance requirements of Table 4.3-2 to require a channel check once per shift and a trip actuating device operational check once per 18 months.

The change corrects a deficiency stemming from the absence of any surveillance requirements or limiting conditions for operation within the Technical Specifications with respect to this existing instrumentation. Such requirements are appropriate for this engineered safety feature actuation instrumentation to provide proper levels of assurance of operability. The NRC staff has reviewed the description of this instrumentation design as contained in the licensee's letter of September 6, 1985, and finds it to be consistent with the logic, setpoints and allowable values added to Specification Tables 3.3-3 and 3.3-4. The staff also reviewed the action statements for an inoperable train and the surveillance requirements added to Table 4.3-2 and finds them appropriate in view of this instrumentation's importance to safety. We conclude, therefore, that these changes provide additional restrictions and surveillances during operation where none would otherwise

exist in the technical specifications, and that because this instrumentation provides for accomplishment of a safety related function, such restrictions and surveillances are appropriate. The changes are consistent with the instrumentation design and will provide no adverse impact on safety. Therefore, these changes are 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 in surveillance requirements, and changes in recordkeeping requirements. We have determined that 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) and (10). 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 (51 FR 3715) on January 29, 1986, (50 FR 51621) on December 18, 1985, and (50 FR 53232) on December 30, 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: Darl S. Hood, PWR #4 PWR Licensing-A
F. Burrows, Electrical, Instrumentation and Control
Systems Branch
H. Gilpin, Accident Evaluation Branch

Dated: March 5, 1986

March 5, 1986

AMENDMENT NO. 51 TO FACILITY OPERATING LICENSE NPF-9 - McGuire Nuclear Station, Unit 1
AMENDMENT NO. 32 TO FACILITY OPERATING LICENSE NPF-17 - McGuire Nuclear Station, Unit 2

Distribution:

Docket File 50-369/370

NRC PDR

Local PDR

PRC System

NSIC

PWR#4 Rdg

MDuncan

DHood

BJYoungblood

OELD

RDiggs, ADM

JPartlow

BGrimes

EJordan

LHarmon

MVirgilio

TBarnhart (8)

FBurrows, EICSB

HGilpin, AEB