

Docket Nos. 50-369
and 50-370

September 12, 1990

Mr. H. B. Tucker, Vice President
Nuclear Production Department
Duke Power Company
P. O. Box 1007
Charlotte, North Carolina 28201-1007

Dear Mr. Tucker:

SUBJECT: ISSUANCE OF AMENDMENT NO. 113 TO FACILITY OPERATING LICENSE NPF-9
AND AMENDMENT NO. 95 TO FACILITY OPERATING LICENSE NPF-17 - MCGUIRE
NUCLEAR STATION, UNITS 1 AND 2 (TACS 73113/73114)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 113 to Facility Operating License NPF-9 and Amendment No. 95 to Facility Operating License NPF-17 for the McGuire Nuclear Station, Units 1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your applications dated October 15, 1987, as supplemented October 22, 1987, and September 4, 1990; and May 11, 1989, as supplemented June 14 and December 8, 1989, and June 18, 1990.

The amendments revise TSs regarding the Auxiliary Building Filtered Ventilation Exhaust system, including related changes associated with the modified Waste Handling area.

Copies of the related Safety Evaluation and Notice of Issuance are also enclosed.

Sincerely,

181

Darl Hood, Project Manager
Project Directorate II-3
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 113 to NPF-9
2. Amendment No. 95 to NPF-17
3. Safety Evaluation
4. Notice

cc w/enclosures:

See next page

* See previous concurrence.

LA:PDII3
RIngram
9/4/90

DSH
PM:PDII3
DHood:jc/sa
9/4/90

*BC:SPLB
CMcCracken
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BC:PRPB
JCunningham
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*OGE
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D:PDII3
DMatthews
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Mr. H. B. Tucker
Duke Power Company

McGuire Nuclear Station

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DATED: September 12, 1990

AMENDMENT NO. 1130 FACILITY OPERATING LICENSE NPF-9 - McGuire Nuclear Station, Unit 1
AMENDMENT NO. 950 FACILITY OPERATING LICENSE NPF-17 - McGuire Nuclear Station, Unit 2

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McGuire R/F

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R. Ingram	09-H-3
D. Hood	09-H-3
OGC-WF	15-B-18
D. Hagan	MNBB-3206
E. Jordan	MNBB-3302
W. Jones	P-130A
G. Hill (8)	P1-137
ACRS (10)	P-135
GPA/PA	17-F-2
J. Calvo	11-F-23
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C. McCracken	8-D-1
J. Cunningham	10-D-4

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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. 113
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 October 15, 1987, as supplemented October 22, 1987, and September 4, 1990; and May 11, 1989, as supplemented June 14 and December 8, 1989, and June 18, 1990, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations as set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the applications, the provisions of the Act, and the rules and 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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2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-9 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 113, 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



David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: September 12, 1990



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. 95
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 (the licensee) dated October 15, 1987, as supplemented October 22, 1987, and September 4, 1990; and May 11, 1989, as supplemented June 14 and December 8, 1989, and June 18, 1990, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations as set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the applications, the provisions of the Act, and the rules and 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 attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-17 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 95, 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



David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: September 12, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 113

FACILITY OPERATING LICENSE NO. NPF-9

DOCKET NO. 50-369

AND

TO LICENSE AMENDMENT NO. 95

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 area of change.

Remove Pages

3/4 3-73
3/4 3-76
3/4 7-16
3/4 7-17
--
3/4 11-10
B 3/4 7-4
5-4

Insert Pages

3/4 3-73
3/4 3-76
3/4 7-16
3/4 7-17
3/4 7-17a
3/4 11-10
B 3/4 7-4
5-4

TABLE 3.3-13 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

	<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
5.	Containment Purge System Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release (Low Range - EMF-39)	1	*	38
6.	Auxiliary Building Ventilation System Noble Gas Activity Monitor (EMF-41 or EMF-36)	1	*	37
7.	Fuel Storage Area Ventilation System Noble Gas Activity Monitor (EMF-42 or EMF-36)	1	*	37
8.	Waste Handling Area Ventilation System			
a.	Noble Gas Activity Monitor (EMF-53)	1 per station	***	37
b.	Flow Rate Monitor	1 per station	***	36
c.	Sampler Minimum Flow Device	1 per station	***	36
9.	Radwaste Facility Ventilation System			
a.	Noble Gas Activity Monitor (EMF-52)	1 per station	***	37
b.	Flow Rate Monitor	1 per station	***	36
c.	Sampler Minimum Flow Rate	1 per station	***	36
10.	Equipment Staging Building Ventilation System			
a.	Noble Gas Activity Monitor (EMF-59)	1	***	37
b.	Flow Rate Monitor	1	***	36
c.	Sampler Minimum Flow Device	1	***	36

McGUIRE - UNITS 1 and 2

3/4 3-73

Amendment No. 113 (Unit 1)
Amendment No. 95 (Unit 2)

TABLE 4.3-9

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
5. Containment Purge System					
Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release Low (Range - EMF-39)	D	P	R(3)	Q(1)	*
6. Auxiliary Building Ventilation System					
Noble Gas Activity Monitor (EMF-41 or EMF-36)	D	M	R(3)	Q(2)	*
7. Fuel Storage Area Ventilation System					
Noble Gas Activity Monitor (EMF-42 or EMF-36)	D	M	R(3)	Q(2)	*
8. Waste Handling Area Ventilation System					
a. Noble Gas Activity Monitor (EMF-53)	D	M	R(3)	Q(2)	*
b. Flow Rate Monitor	D	N.A.	R	Q	*
c. Sampler Minimum Flow Device	D	N.A.	R	Q	*
9. Radwaste Facility Ventilation System					
a. Noble Gas Activity Monitor (EMF-52)	D	M	R(3)	Q(2)	*
b. Flow Rate Monitor	D	N.A.	R	Q	*
c. Sampler Minimum Flow Device	D	N.A.	R	Q	*
10. Equipment Staging Building Ventilation System					
a. Noble Gas Activity Monitor (EMF-59)	D	M	R(3)	Q(2)	*
b. Flow Rate Monitor	D	N.A.	R	Q	*
c. Sampler Minimum Flow Device	D	N.A.	R	Q	*

McGUIRE - UNITS 1 and 2

3/4 3-76

Amendment No. 113 (Unit 1)
Amendment No. 95 (Unit 2)

PLANT SYSTEMS

3/4.7.7 AUXILIARY BUILDING FILTERED VENTILATION EXHAUST SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.7 The Unit 1 and Unit 2 Auxiliary Building Filtered Ventilation Exhaust Systems shall be OPERABLE.

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

ACTION: (Units 1 and 2)

- a. With one Auxiliary Building Filtered Ventilation Exhaust System filter package inoperable, restore the inoperable filter to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one Auxiliary Building Filtered Ventilation Exhaust System flowpath inoperable (except carbon and HEPA filter package components and except as addressed by c.1 and c.2 below) restore the inoperable flowpath to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c.1 With one Auxiliary Building Filtered Ventilation Exhaust System able to maintain a negative pressure but unable to maintain 0.125" WG at the ECCS pump room relative to outside atmosphere, restore system ability to maintain 0.125" WG within the next 7 days or be in a least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c.2 With one Auxiliary Building Filtered Ventilation Exhaust System unable to maintain a negative pressure at the ECCS pump room relative to outside atmosphere, restore system ability to maintain a negative pressure within the next 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- d. With both Unit 1 and Unit 2 Auxiliary Building Filtered Ventilation Exhaust Systems inoperable, restore at least one inoperable system to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.7.1 Each unit's Auxiliary Building Filtered Ventilation Exhaust System filter package shall be demonstrated OPERABLE:

- a. At least once per 18 months, or (1) after any structural maintenance on the HEPA filter or carbon adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system, by:

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- (1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% and uses the test procedure guidance of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 45,700 cfm \pm 10% (both fans operating - (Unit 1) or 40,500 cfm \pm 10% (both fans operating - Unit 2);
 - (2) Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets an acceptance criteria for methyl iodide penetration of 90% at 30°C test temperature, and
- b. After every 1440 hours of carbon adsorber operation, by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets an acceptance criteria for methyl iodide penetration of 90% at 30°C test temperature, and
 - c. At least once per 18 months, by verifying that the pressure drop across the combined HEPA filters and carbon adsorber banks of less than 6 inches Water Gauge while operating the system at a flow rate of 45,700 cfm \pm 10% (both fans operating - Unit 1) or 40,500 cfm \pm 10% (both fans operating - Unit 2), and
 - d. After each complete or partial replacement of a HEPA filter bank, by verifying that the HEPA filter bank satisfies the in-place penetration and bypass leakage testing criteria of less than 1% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 45,700 cfm \pm 10% (both fans operating - Unit 1); or 40,500 cfm \pm 10% (both fans operating - Unit 2); and
 - e. After each complete or partial replacement of a carbon adsorber bank, by verifying that the carbon adsorber satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 45,700 cfm \pm 10% (both fans operating - Unit 1) or 40,500 cfm \pm 10% (both fans operating - Unit 2).

4.7.7.2 Each Unit's Auxiliary Building Filtered Ventilation Exhaust System flowpath shall be demonstrated OPERABLE:

- a. At least once per 31 days, by initiating, from the control room, flow through the HEPA filters and carbon adsorbers and verifying that the system operates for at least 15 minutes.
- b. At least once per 18 months, or (1) after any structural maintenance on the HEPA filter or carbon adsorber housings, or (2) following

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

painting, fire, or chemical release in any ventilation zone communicating with the system, by verifying a system flow rate of 45,700 cfm \pm 10% (both fans operating - Unit 1) or 40,500 cfm \pm 10% (both fans operating - Unit 2) during system operation when tested in accordance with ANSI N510-1980.

- c. At least once per 18 months, by verifying that the system starts on a Safety Injection test signal and directs its exhaust flow through the HEPA filters and carbon adsorbers.

4.7.7.3 Each Unit's Auxiliary Building Filtered Ventilation Exhaust System shall be demonstrated OPERABLE, at least once per 18 months, by verifying that the system maintains the ECCS pump room at a negative pressure relative to outside atmosphere.

TABLE 4.11-2

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

GASEOUS RELEASE TYPE	SAMPLING FREQUENCY	MINIMUM ANALYSIS FREQUENCY	TYPE OF ACTIVITY ANALYSIS	LOWER LIMIT OF DETECTION (LLD) ($\mu\text{Ci/ml}$) ⁽¹⁾
1. Waste Gas Storage Tank	P Each Tank Grab Sample	P Each Tank	Principal Gamma Emitters ⁽⁷⁾	1×10^{-4}
2. Containment Purge	P Each Purge ⁽²⁾ Grab Sample	P Each Purge ⁽²⁾	Principal Gamma Emitters ⁽⁷⁾	1×10^{-4}
3. Unit Vent	W ^{(2),(3),(5)} Grab Sample	M W ⁽²⁾	H-3	1×10^{-6}
			Principal Gamma Emitters ⁽⁷⁾	1×10^{-4}
4. a. Radwaste Facility Vent	W Grab Sample	W	Principal Gamma Emitters ⁽⁷⁾	1×10^{-4}
			H-3	1×10^{-6}
b. Waste Handling Area				
c. Equipment Staging Building				
5. All Release Types as listed in 3. and 4. above.	Continuous ⁽⁶⁾	D ⁽⁴⁾ Charcoal Sample	I-131	1×10^{-11}
			I-133	1×10^{-9}
	Continuous ⁽⁶⁾	D ⁽⁴⁾ Particulate Sample	Principal Gamma Emitters ⁽⁷⁾ (I-131, Others)	1×10^{-10}
			Gross Alpha ⁽⁸⁾	1×10^{-11}
	Continuous ⁽⁶⁾	M Composite Particulate Sample		
Continuous ⁽⁶⁾	Q Composite Particulate Sample	Sr-89, Sr-90	1×10^{-11}	

McGUIRE - UNITS 1 and 2

3/4 11-10

Amendment No. 11 (Unit 1)
Amendment No. 95 (Unit 2)

PLANT SYSTEMS

BASES

STANDBY NUCLEAR SERVICE WATER POND (Continued)

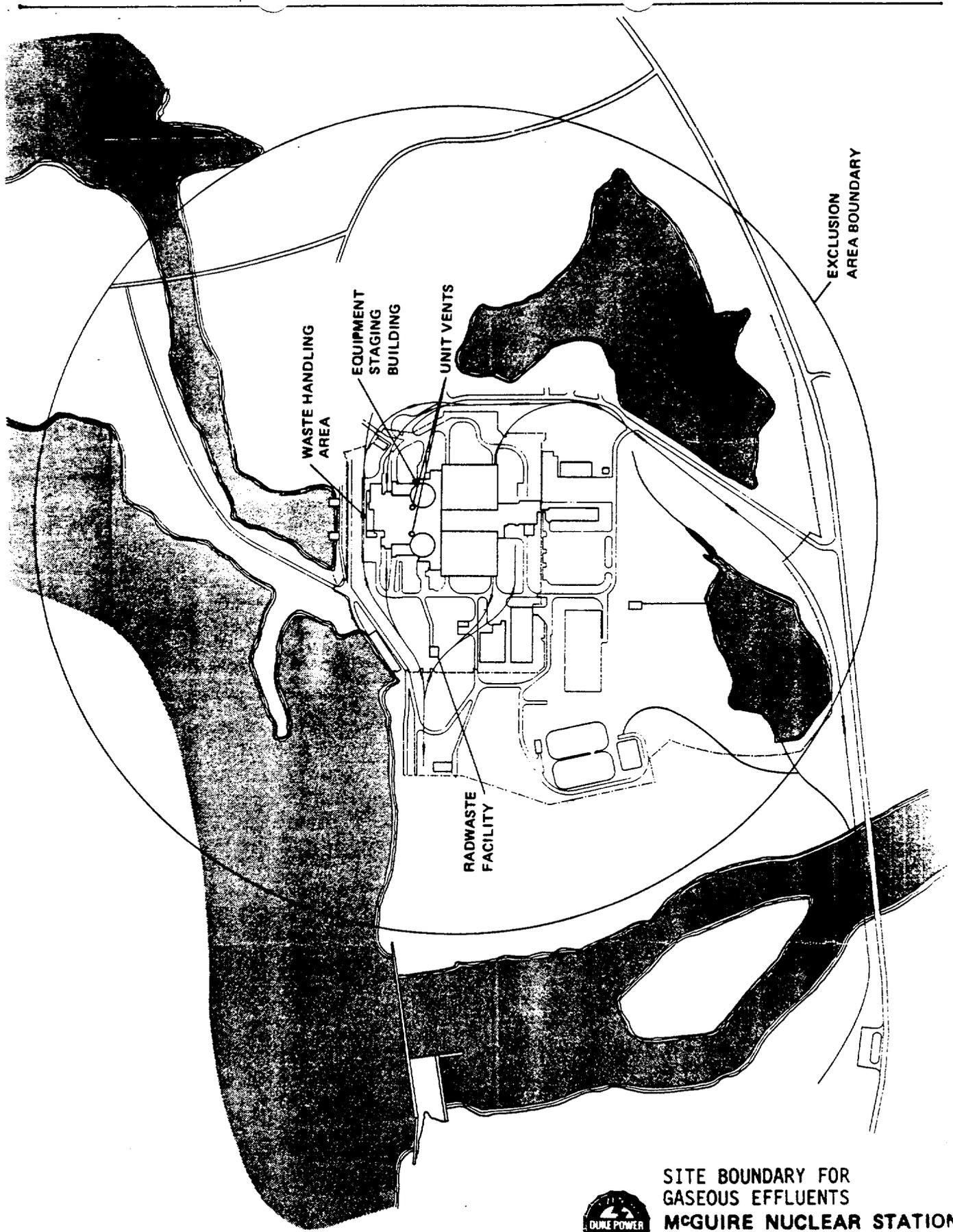
The limitations on minimum water level and maximum temperature are based on providing a 30-day cooling water supply to safety-related equipment without exceeding their design basis temperature and is consistent with the recommendations of Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Plants," March 1974. The Surveillance Requirements specified for the dam inspection will conform to the recommendations of Regulatory Guide 1.127, Revision 1, March 1978.

3/4.7.6 CONTROL AREA VENTILATION SYSTEM

The OPERABILITY of the Control Area Ventilation System ensures that: (1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system, and (2) the control room will remain habitable for operations personnel during and following all credible accident conditions. Cumulative operation of the system with the heaters on for 10 hours over a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criterion 19 of Appendix A, 10 CFR 50. ANSI N510-1975 will be used as a procedural guide for surveillance testing.

3/4.7.7 AUXILIARY BUILDING FILTERED VENTILATION EXHAUST SYSTEM

The OPERABILITY of the Auxiliary Building Filtered Ventilation Exhaust System ensures that radioactive materials leaking from the ECCS equipment within the auxiliary building following a LOCA are filtered prior to reaching the environment. The operation of this system and the resultant effect on offsite dosage calculations were assumed in the accident analyses. ANSI N510-1980 will be used as a procedural guide for surveillance testing. The methyl iodide penetration test criterion for the carbon samples has been established at 10% (i.e., 90% removal) which is greater than the iodine removal in the accident analysis.




 SITE BOUNDARY FOR
 GASEOUS EFFLUENTS
 MCGUIRE NUCLEAR STATION

FIGURE 5.1-3



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 113 TO FACILITY OPERATING LICENSE NPF-9
AND AMENDMENT NO. 95 TO FACILITY OPERATING LICENSE NPF-17
DUKE POWER COMPANY
DOCKET NOS. 50-369 AND 50-370
MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

1.0 INTRODUCTION

By letter dated October 15, 1987, supplemented by letter dated October 22, 1987, and revised September 4, 1990, Duke Power Company (the licensee) proposed amendments to the operating licenses for McGuire Nuclear Station, Units 1 and 2. The proposed amendments would change the Technical Specifications (TSs) for the Auxiliary Building Filtered Ventilation Exhaust (ABFVE) system to include surveillance requirements and associated action statements to address the ability of the ABFVE system to maintain a negative pressure in the Engineered Safety Features (ESF) equipment area (also called the Emergency Core Cooling System (ECCS) pump room area). The present McGuire TS 3/4.7.7 is written on a "per unit" basis, i.e., if one unit is operating, then only the one ABFVE system associated with that unit is required to be operable. The proposed TS 3/4.7.7 would be written consistent with the actual design which is based upon a "shared" system (i.e., if either unit is operating, then both ABFVE systems are required to be operable).

The submittal also proposed changes to the ABFVE system with respect to laboratory carbon adsorber test temperature and acceptance criteria, the allowable operating time between laboratory tests of the carbon adsorber, and the use of the standard, ANSI N510-1980, in specifying the conditions for these tests.

Specifically, TS 3/4.7.7 would be changed to:

- a. Decrease the system flow rate for Unit 1 from 54,000 cfm +/- 10% to 45,700 cfm +/- 10%, and for Unit 2 from 43,000 cfm +/- 10% to 40,500 cfm +/- 10%.

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- b. Specify a 7 day action time if one train of the ABFVE system is inoperable due to an inoperable filter package.
- c. Specify a 72 hour action time if one train of the ABFVE system is inoperable due to an inoperable flowpath.
- d. Specify a 7 day action time if one train of the ABFVE system is unable to maintain a negative pressure of 0.125 inch water gauge at the ECCS pump room.
- e. Specify a 72 hour action time if one train of the ABFVE is unable to maintain a negative pressure at the ECCS pump room.
- f. Specify a 24 hour action time if both ABFVE trains are inoperable.
- g. Replace the standard "ANSI N510-1975" with "ANSI N510-1980."
- h. Replace the term "charcoal" with "carbon."
- i. Decrease the required frequency for obtaining a representative carbon sample for laboratory analysis by replacing "after every 720 hours of charcoal adsorber operation" with "after every 1440 hours of carbon adsorber operation."
- j. Change the carbon adsorber sample test temperature from 80 degrees C (which is required by referenced Regulatory Guide 1.52, Regulatory Position C.6.a) to 30 degrees C. Also change the associated acceptance criterion for penetration of iodine through the carbon test sample from less than 1% penetration to less than 10% penetration.
- k. Add a new surveillance requirement 4.7.7.3 to specify that each unit's ABFVE system be demonstrated to be operable at least once per 18 months by verifying that the system maintains the ECCS pump room at a negative pressure relative to outside atmosphere.

TS Bases 3/4.7.7 would also be changed to delete the statement that "The methyl iodide penetration test criteria for the carbon samples have been made more restrictive than required for the assumed iodine removal in the accident analysis because the humidity may be greater than 70% under normal operating conditions." A new statement would be added that the methyl

iodide penetration test criterion for the carbon samples has been established at 90% removal, which is greater than the iodine removal assumed in the accident analysis.

In support of the request, the submittals also addressed the effects of the proposed changes upon cooling of air in rooms housing operating equipment and upon the relative humidity of exhaust gases at the carbon filters of the ventilation system. A summary probabilistic risk assessment was also included in support of the request.

By letter dated May 11, 1989, as supplemented June 14 and December 8, 1989, and June 18, 1990, the licensee requested further related changes to the TSS. These changes involve TS 4.7.7, "Auxiliary Building Filtered Ventilation Exhaust System - Surveillance Requirements"; Table 3.3-13 (Item 8), "Radioactive Gaseous Effluent Monitoring Instrumentation - Contaminated Parts Warehouse Ventilation System"; Table 4.3-9 (Item 8), "Radioactive Gaseous Effluent Monitoring Instrumentation Surveillance Requirements - Contaminated Parts Warehouse Ventilation System"; Table 4.11-2 (Item 4b), "Radioactive Gaseous Waste Sampling and Analysis Program - Contaminated Parts Warehouse"; and Figure 5.1-3, "Site Boundary for Gaseous Effluents." The TS changes are related to structural modifications of the Auxiliary Building and of facilities and equipment associated with the holding, processing and volume reduction of liquid and solid radwaste materials. The structural modifications involve the addition of new rooms to the Auxiliary Building. Also, the Waste Solidification Building, which is presently a partially open structure, would be enclosed and attached to the Auxiliary Building, with direct access provided between the two.

A new ventilation and air conditioning (HVAC) system has been added to service the added areas, as well as some rooms presently serviced by the ABFVE system. This reduction in the area served by the existing ABFVE system will increase the exhaust flow and permit a lower pressure in the remaining Auxiliary Building rooms. The modified ABFVE system will result in lower system flow rates to the Unit 1 and 2 vents. Presently, the flow rates listed in TS 4.7.7 are 54,000 cubic feet per minute (cfm) +/- 10% for Unit 1, and 43,000 cfm +/- 10% for Unit 2. These rates would be lowered to 45,700 cfm +/- 10% and 40,500 cfm +/- 10%, respectively. The new HVAC filtration system contains a HEPA filter, but no carbon bed, because only particulate radioactive airborne contamination is capable of being generated in the areas serviced by the new HVAC system.

The modification also relocates an existing gaseous effluent release point and relocates an existing radiation monitor (EMF 53) that serves the exhaust from the Contaminated Materials Handling (CMH) area. The exhaust gases from the new HVAC system are combined with those from the CMH area and the mixture is

monitored by EMF 53. The relocated release point would be shown in the proposed revision to TS Figure 5.1-3. A more legible version of TS Figure 5.1-3 would also be substituted. The proposed amendments would also replace the name "Contaminated Parts Warehouse" with the name "Waste Handling Area" in TS Table 3.3-13 (Item 8), Table 4.3-9 (Item 8) and Table 4.11-2 (Item 4b).

2.0 BACKGROUND

As described in Final Safety Analysis Report (FSAR) Section 9.4.2, the Auxiliary Building for the McGuire Nuclear Station is serviced by a ventilation system consisting of several subsystems. One subsystem is the Auxiliary Building Ventilation Exhaust. Each McGuire unit is served by two independent exhaust systems: the Auxiliary Building General Ventilation Exhaust system (which serves areas not subject to contamination), and the Auxiliary Building Filtered Ventilation Exhaust (ABFVE) system (serving areas subject to contamination). The proposed amendments affect only the ABFVE portion of the Auxiliary Building Ventilation Exhaust system. Each system consists of two 50% exhaust fans. Each ABFVE train incorporates a 100% capacity HEPA and carbon filtration unit. The ABFVE system fans receive a signal to start automatically following a loss of coolant accident (LOCA) and, thus, maintain a negative pressure in the ESF area of the building; the collected gases are filtered prior to release through the Unit 1 and Unit 2 vents to the outside environment.

By letter dated September 16, 1985, the licensee submitted a request to change the TSSs to increase from 24 hours to 7 days the time allowed to restore an inoperable ABFVE system train to operable status. This change was needed to provide adequate time for corrective actions such as replacing the carbon adsorber beds or performance of other maintenance when the system is inoperable. The licensee stated that since carbon filter performance tests do not occur only at scheduled outages, some corrective actions could otherwise necessitate a unit shutdown, resulting in undesirable thermal cycling of the Reactor Coolant System with detrimental effects on availability, component lifetime, and safety.

By letter dated September 20, 1985, and as a result of a failed surveillance test, the licensee proposed changes to the TSSs which would temporarily increase from 24 hours to 7 days the time allowed to restore the inoperable Unit 1 ABFVE system train to operable status by replacing the carbon filter bed. However, prior to expiration of the 24 hours permitted by the action statement, the licensee identified and corrected the source of the bypass leakage which resulted in the failed surveillance test. Therefore, by letter of September 23, 1985, the licensee withdrew the request of September 20, 1985, for temporary change.

The earlier request of September 16, 1985, however, remained in effect and certain information in the September 20, 1985, letter continued to apply to its support.

In its letter to the licensee of November 29, 1985, the NRC recommended that the TSs for the ABFVE system be revised to reference ANSI N510-1980 rather than ANSI N510-1975 and to specify a temperature of 30 degrees C for testing of carbon samples.

In response to the licensee's requests by telephone on September 23 and 24, 1986, temporary relief from the TS action statement for the ABFVE system was granted by NRC Regional staff by means of Discretionary Enforcement. The temporary relief was needed to avoid unnecessarily shutting down McGuire Unit 2 since the allowed outage time without this relief would have been exceeded prior to completion of the corrective actions of carbon bed replacement and testing. This NRC action was subsequently acknowledged by the licensee's letter of September 26, 1986. In this letter the licensee also described plans to improve system performance, with the goal of meeting 0.25 inch water gauge negative pressure at the ECCS pump rooms, and to provide further information to the NRC in response to NRC requests of November 29 and December 20, 1985; NRC Inspection Reports 50-369/85-39, 50-370/85-40, 50-369/86-01, and 50-370/86-01; and NRC questions during telephone conversations on September 23 and 24, 1986.

By its letter of October 9, 1986, the licensee provided additional information in support of its request of September 16, 1985 for a permanent TS change. The additional information addressed testing of the ability of the ABFVE system to maintain negative pressures in the ECCS pump rooms and the effects of the post-accident thermal environment and of relative humidity. By letter of January 7, 1987, the NRC denied the request for TS changes based on concerns regarding the absence of periodic surveillance tests to demonstrate the ability of the system to achieve sufficient post-accident negative pressures in the ECCS pump rooms and concerns regarding cooling of post-accident equipment and relative humidities at the carbon filters.

3.0 EVALUATION

The licensee stated that the proposed allowable outage times for one train of the ABFVE system inoperable (7 days if due to an inoperable filter package, or 72 hours if due to an inoperable flow path) provide adequate time to restore the inoperable filter or flow path to operable status. Similarly, the proposed allowed outage times for one train of the ABFVE system unable to maintain a negative pressure of 0.125 inch water gauge (7 days) or unable to maintain a negative pressure (72 hours) provide adequate time to determine the cause of the failed test and to restore the affected system to operable status without unnecessarily causing

a unit shutdown. The licensee further stated that the proposed allowable outage time for both ABFVE trains inoperable (24 hours) is consistent with the current allowed outage time in the McGuire TSs and provides adequate time to determine the cause of the failed test and to restore the affected systems to operable status without unnecessarily causing both units to shutdown. Equipment cooling and humidity control are unaffected by operation in this condition for this limited period of time. The probability of an event occurring of the type which requires the ABFVE system to mitigate its consequences is remote during the above allowed outage times. The staff agrees with these conclusions by the licensee.

The licensee proposes to add a new surveillance requirement which would require demonstration at least once per 18 months that the ABFVE system for each unit can maintain the ECCS pump room at a negative pressure. A surveillance interval of once per 18 months for this purpose is consistent with the Standard Technical Specifications and is, therefore, acceptable. New surveillance requirement 4.7.7.3 and the above action statement with respect to maintaining 0.125 inch water gauge negative pressure also resolve the staff's previous concern regarding the absence of periodic surveillance tests to demonstrate the ability of the system to achieve sufficient post-accident negative pressures in the ECCS pump rooms.

The change from the 1975 version to the 1980 version of ANSI N510 is consistent with acceptance criteria in Standard Review Plan 6.5.1, "ESF Atmosphere Cleanup Systems", and with current industry practice. It is, therefore, acceptable.

The staff concurs with the licensee that changing the term "charcoal" to "carbon" is administrative and has no adverse safety significance.

The licensee notes that operating experience at McGuire supports the proposed change to increase the interval between tests of the carbon filters. Since 1985, the ABFVE system associated with Unit 1 has operated in the filter mode almost continuously, thereby requiring monthly carbon filter sampling and analysis. No significant decrease in radioiodine adsorption efficiency has been noted since that time. This supports the proposed decrease of the carbon adsorber sampling and analysis frequency by extending the interval between tests from 720 hours to 1440 hours of carbon adsorber operation. The staff agrees that the McGuire experience provides adequate support for the licensee's conclusions. The proposed increase in the interval between tests is, therefore, acceptable.

The proposed change of the carbon sample test temperature from 80 degrees C to 30 degrees C is in response to the NRC staff's request by letter dated November 29, 1985. Since 1986, the licensee has performed carbon sample testing under dual conditions, comparing the results of tests conducted under TS conditions (80 degrees C, 95% relative humidity) to the results of tests performed at more rigorous conditions (30 degrees C, 95% relative humidity). The test temperature of 30 degrees C is a more meaningful (more realistic) assessment of the iodine removal efficiency of the carbon beds. Since this test is expected to result in higher methyl iodide penetrations, the staff recognized in its letter that this change might be accompanied by relaxation of the TS acceptance criterion for the laboratory tests. The licensee's proposal would change this acceptance criterion for methyl iodide penetration from less than 1% to less than 10%. The staff finds that the proposed acceptance criterion of less than 10% methyl iodide penetration (corresponding to a methyl iodide removal efficiency greater than or equal to 90%) is consistent with the filter efficiencies assigned by the staff for its independent calculations of offsite dose, as discussed below. The staff, therefore, finds this change acceptable.

The NRC had expressed previous concern that operation of carbon filters in air streams with relative humidities in excess of 70% can decrease their iodine adsorption efficiencies. Moreover, the ABFVE system at McGuire does not include heaters or other devices to limit the relative humidity of air reaching the carbon filters to less than or equal to 70%. The licensee notes, however, that the outside air will be heated naturally by the warmer indoor temperature as the outside air flows through the Auxiliary Building. Recognizing this warming, the licensee has evaluated the new ABFVE system flow rates to determine effects upon relative humidity entering the filters. Calculations were performed for various combinations of ventilation, building internal heat loads and outdoor weather extremes to predict the expected range of humidity. The maximum relative humidity of air entering the filters was calculated by the licensee to be 77% for the worst case conditions evaluated. The NRC staff finds the licensee's calculations to be accurate, but that they do not address other likely worst case conditions. The staff judges that the probability of outdoor air conditions which could result in relative humidities greater than 70% is not low enough to justify the exclusion of such conditions (i.e., higher relative humidities) from the licensee's dose calculations. As is further explained below, the staff has evaluated this issue based upon its independent calculations.

As discussed above, the staff concurs with the proposed laboratory test acceptance criterion of 90% methyl iodide removal efficiency for the 30 degrees C, 95% relative humidity test conditions. For its independent calculations of offsite dose, the NRC staff conservatively assumed filter efficiencies of 70%

for elemental iodine and 50% for organic iodide. This degree of conservatism between TS requirements and dose calculation assumptions is consistent with the guidance of RG 1.52. RG 1.52 specifies that a filter efficiency of 95% may be assigned for elemental iodine and for organic iodide for a 2-inch carbon filter if relative humidity is maintained to less than or equal to 70%. In such cases, to assure 95% filter efficiency, representative carbon samples are tested at 70% relative humidity and iodide removal of at least 99% is required by TSs. Since the McGuire ABFVE system does not maintain relative humidities at or below 70%, the NRC staff assigned filter efficiencies of 70% for elemental iodine and 50% for organic iodide for its independent calculations of offsite dose.

The proposed TS changes in the licensee's submittals of May 11, 1989, as supplemented June 14 and December 8, 1989, and June 18, 1990, are based on physical modifications to redirect the ventilation exhaust from 13 Auxiliary Building rooms from the ABFVE carbon-filtered exhaust train to the new HEPA-filtered exhaust train. These rooms contain no potential Reactor Coolant System leakage sources; rather, these rooms possess contamination only by the transport of solid waste into the area. There are no sources of volatile radioiodine in any of the areas serviced by the new HVAC system. Therefore, no carbon filters are required and the use of HEPA filters without carbon beds in the new HVAC system is acceptable.

As a result of structural and system modifications described in the May 11, 1989 submittal, the area served by the revised ABFVE system is reduced and the system flow rates to the Unit 1 and Unit 2 vents are, therefore, lowered. With regard to this and the associated request to reduce the system flow rates in the TS accordingly, such a change should not diminish the capacity of the ABFVE system to maintain negative pressures in the ECCS pump rooms. This was confirmed by tests conducted to simulate the post-modified conditions. Based on the tests, the areas which continue to be served by the ABFVE system will experience net increases in exhaust flow; therefore, the ability to maintain negative pressures is enhanced. As discussed in the submittal of September 4, 1990, the licensee has performed a test to demonstrate that each train of the ABFVE system is capable of providing a negative pressure of at least 0.125 inch water gauge in each ECCS pump room. The test results were first presented in the licensee's letter to the NRC dated October 9, 1986, and incorporated into the October 15, 1987, submittal by reference, in anticipation of supporting a negative pressure in the ECCS pump room of 0.25 inch water gauge. However, test results using smoke sticks demonstrate that the system function of collecting and containing airborne contamination is sufficiently met with a 0.125 inch negative pressure. The licensee also notes that because the ECCS pump rooms are located at underground elevations and in central areas of the Auxiliary Building, the negative

pressure maintained by the ABFVE system after an accident would not be adversely affected by outside wind conditions.

Additionally, FSAR Table 9.4.2-3 compares the ABFVE system design with the guidance of Regulatory Guide (RG) 1.52, "Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants." The licensee finds that this comparison remains valid. The licensee has committed to update all values of filter train flow in the FSAR table to the new flow values.

With regard to the reduced flow rates and the NRC's previous concerns regarding cooling of post-accident equipment, the licensee calculates that under worst-case conditions, post-accident building temperatures for the new ABFVE system flow rates would reach no more than 133 degrees F. This calculation assumes extended operation at high ambient outdoor conditions, minimum ventilation rates, and takes no credit for reduced heat loads concurrent with unit shutdown. Most electrical equipment (transmitters and motor operated valves) located in the areas served by the ABFVE system is designed for a continuous operating temperature of 120 degrees F. The licensee concluded that increases above 120 degrees F should have no adverse effect on the electrical equipment if the increases are infrequent and of short duration (i.e., 5 days). Other equipment (motor control centers, remote starters, contactors, power panel boards, and control panels) located in the areas served by the ABFVE system is designed for normal operation up to 104 degrees F. The licensee concluded that limited increases above 104 degrees F should have no adverse effect if the increases are infrequent and of short duration. The adverse effects of temperature on essential equipment are covered under the licensee's environmental qualification program, which has been reviewed and approved by the NRC staff. The staff, therefore, finds that the design of the ABFVE system provides a suitable environment for the operation of vital equipment during an accident.

The licensee stated that calculated offsite doses and control room operator doses from postulated accidents following this modification remain within the limits of 10 CFR Part 100 and 10 CFR Part 50. Additionally, the licensee stated that there are no increases in offsite doses or in doses to control room operators for any postulated accidents as a result of this modification. The licensee provided a description of the assumptions and parameters used in these calculations. In these analyses the licensee did not take credit for iodine removal by the ABFVE system filter units. The staff previously performed independent calculations of the offsite doses following a postulated design basis LOCA. The staff's calculated doses, both with and without credit for iodine removal by the ABFVE system filter unit, were within regulatory guidelines; this agrees with the licensee's

conclusion. The staff also reviewed the description of the assumptions and parameters used in the licensee's calculation of doses to the control room operators and found them to be acceptable. Based on the staff review and calculations, the staff concludes that dose consequences following the modifications will continue to be acceptable.

Several TS tables use the term "Contaminated Parts Warehouse" in reference to the present effluent from the CMH area. Since the major component of the effluent released from the new vent stack would be the exhaust from the new HVAC system servicing the new Waste Handling Area, the licensee deems it more appropriate to use the term "Waste Handling Area" to characterize the total effluent. The change would also reflect the new location for radiation monitor EMF 53. Therefore, the licensee proposes to replace the term "Contaminated Parts Warehouse" by the term "Waste Handling Area" in TS Table 3.3-13 (Item 8), Table 4.3-9 (Item 8), and Table 4.11-2 (Item 4b). We find this change in terminology to have no adverse impact on safety and, therefore, to be acceptable.

The relocated gaseous effluent release point is shown in the revised TS Figure 5.1-3. The exhaust from the CMH area and from the new HVAC system would be released 68 feet above grade level from a new vent stack located 60 feet from the existing vent location. The new vent provides for improved atmospheric dispersion of the gaseous effluent because it is higher than the existing release point and is more favorably located with respect to nearby structures. Existing radiation monitor EMF 53 will be relocated to monitor all exhaust gases for the new release point and will continue to terminate releases automatically if significant radiation levels are sensed.

Although the effluent from the relocated release point would contain the exhaust from the new HVAC system in addition to the existing exhaust from the CMH area, the total radioactivity generated by or released from the facility would not be increased. The new HVAC system would merely be removing particulate airborne contamination from exhaust air that at present is filtered by the existing ABFVE system. Offsite doses during normal operation would not increase.

Based upon the above review, the proposed changes to the structures and ventilation systems, including the relocation of the release point and the associated TS changes, are acceptable.

4.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32 and 51.35, environmental assessments and findings of no significant impact were published

in the Federal Register on September 11, 1989 (54 FR 37515) and August 1, 1990 (55 FR 31258). The licensee's subsequent submittal of September 4, 1990, does not alter these assessments and findings.

Accordingly, based upon the environmental assessments, the Commission has determined that the issuance of these amendments will have no significant effect on the quality of the human environment.

5.0 CONCLUSION

The Commission issued Notices of Consideration of Issuance of Amendments to Facility Operating Licenses and Opportunity for Hearing, which were published in the Federal Register (53 FR 10957) on April 4, 1988, and (54 FR 31269) on July 27, 1989. No requests for hearing were received. The licensee's subsequent letters of December 8, 1989, and June 18, 1990, provided supplemental information that did not change the technical substance of the request and did not warrant renoticing. Similarly, the licensee's subsequent submittal of September 4, 1990, changing the proposed negative pressure required to be achieved in the ECCS pump rooms from 0.25 to 0.125 inches water gauge, does not affect the function of the system and did not warrant renoticing.

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: September 12, 1990

UNITED STATES NUCLEAR REGULATORY COMMISSIONDUKE POWER COMPANY, et al.DOCKET NOS. 50-369 AND 50-370NOTICE OF ISSUANCE OF AMENDMENTS TOFACILITY OPERATING LICENSES

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 113 to Facility Operating License No. NPF-9 and Amendment No. 95 to Facility Operating License No. NPF-17 issued to Duke Power Company, et al., (the licensee) which revised the Technical Specifications for operation of the McGuire Nuclear Station, Units 1 and 2, located in Mecklenburg, North Carolina.

The amendments are effective as of the date of issuance.

The amendments revised the Technical Specifications regarding the Auxiliary Building Filtered Ventilation Exhaust system, including related changes associated with the modified Waste Handling area.

The applications for the amendments comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendments.

Notices of Consideration of Issuance of Amendments and Opportunity for Hearing in connection with this action were published in the FEDERAL REGISTER on April 4, 1988 (53 FR 10957) and July 27, 1989 (54 FR 31269). No request for a hearing or petition for leave to intervene was filed following this

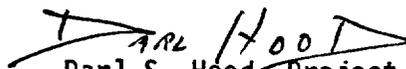
notice. By letters of December 8, 1989, June 18, 1990, and September 4, 1990, the licensee provided supplemental information that did not change the technical substance of the previously noticed requests and, thus, did not warrant renoticing.

The Commission has prepared Environmental Assessments related to the action and has determined not to prepare environmental impact statements. Based upon the environmental assessments, the Commission has concluded that the issuance of these amendments will not have a significant effect on the quality of the human environment (54 FR 37515, September 11, 1989; 55 FR 31258, August 1, 1990).

For further details with respect to the action see (1) the applications for amendment dated October 15, 1987, as supplemented October 22, 1987, and September 4, 1990; and May 11, 1989, as supplemented June 14 and December 8, 1989, and June 18, 1990, (2) Amendment No. 113 to License No. NPF-9 and Amendment No. 95 to License No. NPF-17 and (3) the Commission's related Safety Evaluation and Environmental Assessment. All of these items are available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the Atkins Library, University of North Carolina, Charlotte (UNCC Station), North Carolina 28223. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Director, Division of Reactor Projects - I/II.

Dated at Rockville, Maryland this 12th day of September 1990.

FOR THE NUCLEAR REGULATORY COMMISSION



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