

November 17, 1986

Dockets Nos. 50-259/260/296

Manager of Nuclear Power
Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37401

Dear Sir:

The Commission has issued the enclosed Amendments Nos. 130, 126, and 101 to Facility Operating Licenses Nos. DPR-33, DPR-52 and DPR-68 for the Browns Ferry Nuclear Plant, Units 1, 2 and 3. These amendments are in response to your application dated April 8, 1986 (TVA BFNP TS 219).

The amendments change the Technical Specifications to delete references to charcoal filter heaters in the Standby Gas Treatment Systems.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's Bi-Weekly Federal Register Notice.

Sincerely,

Original signed by
M. Grotenhuis

Marshall Grotenhuis, Project Manager
BWR Project Directorate #2
Division of BWR Licensing

Enclosures:

1. Amendment No. 130 to License No. DPR-33
2. Amendment No. 126 to License No. DPR-52
3. Amendment No. 101 to License No. DPR-68
4. Safety Evaluation

cc w/enclosures:
See next page

LSpessard, DI
SRConnelly, OIA
BJYoungblood

FCantrell, RII
GGears

DISTRIBUTION:

Docket File	RBenerno
NRC PDR	SNorris
Local PDR	OGC - Bethesda
JPartlow	ACRS (10)
LHarmon	EJordan
BGrimes	TBarnhart (12)
WJones	DVassallo
OPA	LFMB
Plant File	EButcher
NThompson	HDenton
HThompson	JHolonich
SRichardson, IE	CStahle
JTaylor, IE	TKenyon
BHayes, OI	WLong
NGrace, RII	TAlexion
SWeise, RII	RWessman
GZech, RII	MGrotenhuis

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*DBL:PD#2 SNorris 11/5/86	DBL:PD#2 GGears 11/9/86	DBL:PD#2 MGrotenhuis/cd 11/6/86	OGC - Bethesda Johnson 11/10/86	DBL:PD#2 DMiller 11/14/86
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Handwritten notes:
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Manager, Office of Nuclear Power
Tennessee Valley Authority

Browns Ferry Nuclear Plant
Units 1, 2, and 3

cc:

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State Department of Public Health
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Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
101 Marietta Street, Suite 2900
Atlanta, Georgia 30303

Mr. Steven Roessler
U. S. Nuclear Regulatory Commission
Reactor Training Center
Osborne Office Center, Suite 200
Chattanooga, Tennessee 37411



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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-259

BROWNS FERRY NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 130
License No. DPR-33

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Tennessee Valley Authority (the licensee) dated April 8, 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, 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;
 - 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 amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-33 is hereby amended to read as follows:

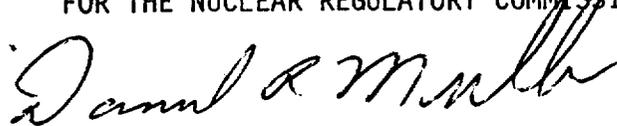
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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 130, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance and shall be implemented within 90 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Daniel R. Muller, Director
BWR Project Directorate #2
Division of BWR Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 17, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 130

FACILITY OPERATING LICENSE NO. DPR-33

DOCKET NO. 50-259

Revise Appendix A as follows:

1. Remove the following pages and replace with identically numbered pages.

Pages

56

86

2. The marginal lines on these pages denote the area being changed.

TABLE 3.2.A
PRIMARY CONTAINMENT AND REACTOR BUILDING ISOLATION INSTRUMENTATION

Minimum No. Instrument Channels Operable per Trip Sys (1)(11)	Function	Trip Level Setting	Action (1)	Remarks
2 (12)	Instrument Channel - Main Steam Line Tunnel High Temperature	≤ 200°F	B	1. Above trip setting initiates Main Steam Line Isolation.
2 (14)	Instrument Channel - Reactor Water Cleanup System Floor Drain High Temperature	160 - 180°F	C	1. Above trip setting initiates Isolation of Reactor Water Cleanup Lin. from Reactor and Reactor Water Return Line.
2	Instrument Channel - Reactor Water Cleanup System Space High Temperature	160 - 180°F	C	1. Same as above
1	Instrument Channel - Reactor Building Ventilation High Radiation - Reactor Zone	≤ 100 mr/hr or downscale	G	1. 1 upscale or 2 downscale will a. Initiate SGTS b. Isolate reactor zone and refueling floor. c. Close atmosphere control system.
1	Instrument Channel - Reactor Building Ventilation High Radiation - Refueling Zone	≤ 100 mr/hr or downscale	F	1. 1 upscale or 2 downscale will a. Initiate SGTS b. Isolate refueling floor. c. Close atmosphere control system.
2 (7) (8)	Instrument Channel SGTS Flow - Train A Heater	R.H. Heater ≤ 2000 cfm	H and (A or F)	Below 2000 cfm, trip setting R.H. heater will shut off.
2 (7) (8)	Instrument Channel SGTS Flow - Train B Heater	R.H. Heater ≤ 2000 cfm	H and (A or F)	Below 2000 cfm, trip setting R.H. heater will shut off.
2 (7) (8)	Instrument Channel SGTS Flow - Train C Heater	R.H. Heater ≤ 2000 cfm	H and (A or F)	Below 2000 cfm, trip setting R.H. heater will shut off.

TABLE 4.2.A
SURVEILLANCE REQUIREMENTS FOR PRIMARY CONTAINMENT AND REACTOR BUILDING ISOLATION INSTRUMENTATION

<u>Function</u>	<u>Functional Test</u>	<u>Calibration Frequency</u>	<u>Instrument Check</u>
Instrument Channel - Reactor Building Ventilation High Radiation - Refueling Zone	(1) (19) (22)	once/3 months	once/day (8)
Instrument Channel - SGTS Train A Heater	(4)	(9)	N/A
Instrument Channel - SGTS Train B Heater	(4)	(9)	N/A
Instrument Channel - SGTS Train C Heater	(4)	(9)	N/A
Reactor Building Isolation Timer (refueling floor)	(4)	once/operating cycle	N/A
Reactor Building Isolation Timer (reactor zone)	(4)	once/operating cycle	N/A



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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-260

BROWNS FERRY NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 126
License No. DPR-52

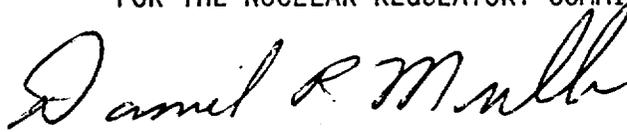
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Tennessee Valley Authority (the licensee) dated April 8, 1986 complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, 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;
 - 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 amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-52 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.126 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance and shall be implemented within 90 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Daniel R. Muller, Director
BWR Project Directorate #2
Division of BWR Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 17, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 126

FACILITY OPERATING LICENSE NO. DPR-52

DOCKET NO. 50-260

Revise Appendix A as follows:

1. Remove the following pages and replace with identically numbered pages.

Pages

56

86

2. The marginal lines on these pages denote the area being changed.

TABLE J.2.A
PRIMARY CONTAINMENT AND REACTOR BUILDING ISOLATION INSTRUMENTATION

Minimum No. Instrument Channels Operable per Trip Sys(1)(11)	Function	Trip Level Setting	Action (1)	Remarks
2 (12)	Instrument Channel - Main Steam Line Tunnel High Temperature	≤ 200°F	B	1. Above trip setting initiates Main Steam Line Isolation.
3 (14)	Instrument Channel - Reactor Water Cleanup System Floor Drain High Temperature	160 - 180°F	C	1. Above trip setting initiates Isolation of Reactor Water Cleanup Lin. from Reactor and Reactor Water Return Line.
2	Instrument Channel - Reactor Water Cleanup System Space High Temperature	160 - 180°F	C	1. Same as above
1	Instrument Channel - Reactor Building Venti- lation High Radiation - Reactor Zone	≤ 100 mr/hr or downscale	G	1. 1 upscale or 2 downscale will a. Initiate SGTS b. Isolate reactor zone and refueling floor. c. Close atmosphere control system.
1	Instrument Channel - Reactor Building Venti- lation High Radiation - Refueling Zone	≤ 100 mr/hr or downscale	F	1. 1 upscale or 2 downscale will a. Initiate SGTS b. Isolate refueling floor. c. Close atmosphere control system.
2 (7) (8)	Instrument Channel SGTS Flow - Train A Heater	R.H. Heater ≤ 2000 cfm	H and (A or F)	Below 2000 cfm, trip setting R.H. heater will shut off.
2 (7) (8)	Instrument Channel SGTS Flow - Train B Heater	R.H. Heater ≤ 2000 cfm	H and (A or F)	Below 2000 cfm, trip setting R.H. heater will shut off.
2 (7) (8)	Instrument Channel SGTS Flow - Train C Heater	R.H. Heater ≤ 2000 cfm	H and (A or F)	Below 2000 cfm, trip setting R.H. heater will shut off.

TABLE 8.2.A
SURVEILLANCE REQUIREMENTS FOR PRIMARY CONTAINMENT AND REACTOR BUILDING ISOLATION INSTRUMENTATION

<u>Function</u>	<u>Functional Test</u>	<u>Calibration Frequency</u>	<u>Instrument Check</u>
Instrument Channel - Reactor Building Ventilation High Radiation - Refueling Zone	(1) (14) (22)	once/3 months	once/day (8)
Instrument Channel - SGTS Train A Heater	(4)	(9)	N/A
Instrument Channel - SGTS Train B Heater	(4)	(9)	N/A
Instrument Channel - SGTS Train C Heater	(4)	(9)	N/A
Reactor Building Isolation Timer (refueling floor)	(4)	once/operating cycle	N/A
Reactor Building Isolation Timer (reactor zone)	(4)	once/operating cycle	N/A



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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-296

BROWNS FERRY NUCLEAR PLANT, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 101
License No. DPR-68

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Tennessee Valley Authority (the licensee) dated April 8, 1986 complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, 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;
 - 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 amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-68 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 101, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance and shall be implemented within 90 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Daniel R. Muller, Director
BWR Project Directorate #2
Division of BWR Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 17, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 101

FACILITY OPERATING LICENSE NO. DPR-68

DOCKET NO. 50-296

Revise Appendix A as follows:

1. Remove the following pages and replace with identically numbered pages.

Pages

58
89

2. The marginal lines on these pages denote the area being changed.

TABLE 3.2.A
PRIMARY CONTAINMENT AND REACTOR BUILDING ISOLATION INSTRUMENTATION

Minimum No. Instrument Channels Operable per Trip Sys(1)(11)	Function	Trip Level Setting	Action (1)	Remarks
2 (14)	Instrument Channel - Reactor Water Cleanup System Floor Drain High Temperature	160 - 180°F	C	1. Above trip setting initiates isolation of Reactor Water Cleanup Lin. from Reactor and Reactor Water Return Line.
2	Instrument Channel - Reactor Water Cleanup System Space High Temperature	160 - 180°F	C	1. Same as above
1	Instrument Channel - Reactor Building Ventila- tion High Radiation - Reactor Zone	≤ 100 nr/hr or downscale	G	1. 1 upscale or 2 downscale will a. Initiate SGTS b. Isolate reactor zone and refueling floor. c. Close atmosphere control system.
58 1	Instrument Channel - Reactor Building Ventila- tion High Radiation - Refueling Zone	≤ 100 nr/hr or downscale	F	1. 1 upscale or 2 downscale will a. Initiate SGTS b. Isolate refueling floor. c. Close atmosphere control system.
2(7) (8)	Instrument Channel SGTS Flow - Train A Heater	R.H. Heater ≤ 2000 cfm	H and (A or F)	Below 2000 cfm, trip setting R.H. heater will shut off.
2(7) (8)	Instrument Channel SGTS Flow - Train B Heater	R.H. Heater ≤ 2000 cfm	H and (A or F)	Below 2000 cfm, trip setting R.H. heater will shut off.
2(7) (8)	Instrument Channel SGTS Flow - Train C Heater	R.H. Heater ≤ 2000 cfm	H and (A or F)	Below 2000 cfm, trip setting R.H. heater will shut off.

TABLE 8.2.A
SURVEILLANCE REQUIREMENTS FOR PRIMARY CONTAINMENT AND REACTOR BUILDING ISOLATION INSTRUMENTATION

<u>Function</u>	<u>Functional Test</u>	<u>Calibration Frequency</u>	<u>Instrument Check</u>
Instrument Channel - Reactor Building Ventilation High Radiation - Refueling Zone	(1) (14) (22)	once/3 months	once/day (8)
Instrument Channel - SGTS Train A Beater	(4)	(9)	N/A
Instrument Channel - SGTS Train B Beater	(4)	(9)	N/A
Instrument Channel - SGTS Train C Beater	(4)	(9)	N/A
Reactor Building Isolation Timer (refueling floor)	(4)	once/operating cycle	N/A
3			
Reactor Building Isolation Timer (reactor zone)	(4)	once/operating cycle	N/A



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 130 TO FACILITY OPERATING LICENSE NO. DPR-33

AMENDMENT NO. 126 TO FACILITY OPERATING LICENSE NO. DPR-52

AMENDMENT NO. 101 TO FACILITY OPERATING LICENSE NO. DPR-68

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2 AND 3

DOCKETS NOS. 50-259, 50-260 AND 50-296

1.0 INTRODUCTION

By letter dated April 8, 1986 (TVA BFNP TS-219), the Tennessee Valley Authority (the licensee or TVA) requested amendments to Facility Operating Licenses Nos. DPR-33, DPR-52 and DPR-68 for the Browns Ferry Nuclear Plant, Units 1, 2 and 3. The proposed amendments would change the Technical Specifications (TS) to delete references to one of the two electrical heaters in each of the three Standby Gas Treatment System (SGTS) trains in Brown Ferry Technical Specification Tables 3.2.A and 4.2.A (pages 56 and 86 for Units 1 and 2; pages 58 and 89 for Unit 3). Specifically, the licensee proposes to delete the charcoal adsorber heaters while retaining relative humidity control heaters by changing "heaters" in tables from plural to singular for each SGTS train.

The licensee stated in its submittal that the charcoal filter heaters have been deenergized and are being removed from the SGTS under the provisions of 10 CFR 50.59. We did not concur with the licensee's interpretations of 10 CFR 50.59. The staff called the Licensee and informed it that deenergizing the heaters prior to the TS change being approved by the staff would be a violation of the Browns Ferry Technical Specification. Further, since the change involves a TS change it cannot be done under 10 CFR 50.59. Based on this conversation the licensee will not remove the heaters under 10 CFR 50.59 but, wait for NRC approval of the amendment request.

2.0 EVALUATION

The Browns Ferry SGTS serves Units 1, 2, and 3, and consists of three filtrations trains. Each train contains an electric heater (40 kw) to reduce the relative humidity of the influent air to less than 70 percent. The heater is energized automatically with startup of the SGTS and remains energized throughout SGTS operation. Upon receipt of a DBA signal, all three SGTS trains should start. The operator may shutdown manually one of the three trains.

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In addition to the above relative humidity control heaters, each of three SGTS trains is also provided with an electrical charcoal filter heater. The original purpose of these heaters was to ensure that the charcoal adsorber beds do not experience significant moisture buildup during SGTS standby conditions. The charcoal bed temperature is thermostatically controlled by the charcoal filter heaters, with high and low temperatures alarmed in the Main Control Room. These electrical charcoal filter heaters are automatically tripped upon startup of a SGTS train.

Subsequently, the licensee has determined that operation of each train, with its associated relative humidity control heater on for 10 hours each month, as required in the Browns Ferry Technical Specification, is sufficient to control moisture buildup in the charcoal adsorber bed. This determination is consistent with the staff's guidance in Regulatory Guide 1.52, Section c.4.d, which states that "Each ESF atmosphere cleanup train should be operated at least 10 hours per month, with heaters on (if so equipped), in order to reduce the buildup of moisture on the adsorbers and HEPA filters."

The Standard Technical Specification (STS) for GE/BWRs in its Basis Section 3/4.7.2 also states that 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 staff does not require either a separate heater for the charcoal adsorbers or more than one heater in each train, so long as the installed heater is capable of reducing the relative humidity of influent air to less than 70 percent. The staff further accepts that the operation of the SGTS with this heater on for 10 hours each month is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters.

The staff discussed with the licensee, the Browns Ferry Technical Specification Section 4.7.b.2.d to assure the inclusion of the relative humidity control heaters in the SGTS surveillance test. In addition, the Browns Ferry Test Procedure SI-4.7.B, Revision 2, and the schematic wiring diagram 45N771-2 show that the SGTS surveillance tests are performed with the relative humidity control heaters on automatic control mode. The information assists in resolving the staff's concerns regarding the inclusion of the heaters in the SGTS surveillance tests.

On the basis of the above evaluation, and the fact that the proposed amendments are consistent with (1) Regulatory Guide 1.52, Rev. 1, "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" and (2) GE Standard Technical Specifications, BWR/4 and BWR/5. The staff finds that the licensee's requested amendments are acceptable.

3.0 ENVIRONMENTAL CONSIDERATIONS

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and in surveillance requirements. The staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there should be no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding 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 the amendments.

4.0 CONCLUSION

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 the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: J. Lee

Dated: November 17, 1986