Docket Nos. 50-250 50-260 and 50-296

> Mr. Hugh G. Parris Manager of Power Tennessee Valley Authority 500 Chestnut Street, Tower II Chattanooga, Tennessee 37401

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Dear Mr. Parris:

The Commission has issued the enclosed Amendments Nos.54,49 and 26 to Facility Licenses Nos. DPR-33, DPR-52 and DPR-68 for the Browns Ferry Nuclear Plant, Units Nos. 1, 2 and 3. These amendments which are in response to your application dated August 27, 1979 (TVA BFNP TS 129), change the Technical Specifications to increase the high drywell pressure trip level setting from 2.0 psig to 2.5 psig.

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

Sincerely,

Thomas A. Ippolito, Chief Operating Reactors Branch #3 Division of Operating Reactors

Enclosures:

1. Amendment No. 54 to DPR-33 2. Amendment No. 49 to DPR-52

Amendment No. 24 to DPR-68

Safety Evaluation

Notice 5.

cc w/enclosures: see next page

ORB#3 OFFICE 11/06 cc:

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Mr. Dennis McCloud Tennessee Valley Authority 400 Chestnut Street, Tower II Chattanooga, Tennessee 37401

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Director, Technical Assessment Division Office of Radiation Programs (AW-459) US EPA Crystal Mall #2 Arlington, Virginia 20460 U. S. Environmental Protection Agency Region IV Office ATTN: EIS COORDINATOR 345 Courtland Street Atlanta, Georgia 30308

Mr. Robert F. Sullivan U. S. Nuclear Regulatory Commission P. O. Box 1863 Decatur, Alabama 35602



TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-259

BROWNS FERRY NUCLEAR PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 54 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 August 27, 1979, 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 License No. DPR-33 is hereby amended to read as follows:

(2) <u>Technical Specifications</u>

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 54, 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 its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Thomas A Ippolito, Chief Operating Reactors Branch #3 Division of Operating Reactors

Attachment: Changes to the Technical Specifications

Date of Issuance: November 9, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 54

FACILITY OPERATING LICENSE NO. DPR-33

DOCKET NO. 50-259

Revise Appendix A as follows:

Remove the following pages and replace with the identically numbered pages:

55/56

The underlined page is the page being changed; the marginal line on this page denotes the area being changed. The overleaf page is provided for convenience.

TABLE 3.2.A
PRIMARY CONTAINMENT AND REACTOR BUILDING ISOLATION INSTRUMENTATION

Hinima No. Operable Por Trip Sys (1)	Punction	Trip Level Setting	Action (1)	-	Remarks
	Instrument Channel Reactor Low Vater Level (6)	≥ 538" above vessel zero	A or (B and E)	1.	Below trip setting does the following: a. Initiates Reactor Building (
	Instrument Channel - Reactor High Pressure	100 + 15 paig	D	1.	Above trip satting isolates the shutdown cooling suction valves of the RHR system
វ ហ	lustrument Clunnel - Reactor Low Vater Level (LIS-3-56A-D, SW /1)	≥ 470 above vessel zero.	A .	1.	Below trip setting initiates Mais Steam Line Isolation
2	Instrument Channel High Dryvell Pressure (6) (PS-64-56A-D)	₹2.5 psig	A or (B and E)	1.	Above trip setting does the following: a. Initiates Reactor Building Isolation b. Initiates Primary Containment Isolation c. Initiates SGTS
2	Instrument Channel High Radiation Main Steam Line Tunnel (6)	3 times normal rated full power background	B	1.	Above trip setting initiates Main Steam Line Isolation
2	Instrument Channel - Low Pressure Hain Steam Line	≥825 psig (4)	В	1.	Below trip setting initiates Main Steam Line leolation
2(3)	Instrument Channel - High Flow Hain Steam Line	< 140% of cated steam flow	2 B	1.	Above trip setting initiates Hain Steam Line Teolation

	nimum No. Erable Per Sys (1)	Function	Trip Level Setting	Action (1)		Remarks
	2		< 200 ^o F	В	1.	Above trip setting initiates Main Steam Line Isolation
	2	Instrument Channel - Reactor Water Cleanup System Floor Drain High Temperature	160 - 180 ^o F	С	1.	Above trip setting initiates Isolation of Reactor Water Cleanup Line from Reactor and Reactor Water Return Line.
√ n	2	Instrument Channel - Reactor Water Cleanup System Space High Temperature	160 - 180°F	С	1.	Same as above
. , . ,	1	Instrument Channel - Reactor Building Venti- Lation High Radiation - Reactor Zone	<pre><.100 mr/hr or downscale</pre>	G	1.	 l upscale or 2 downscale will a. Initiate SGTS b. Isolate reactor zone and refuleing floor. c. Close atmosphere control system.
	ì	Instrument Channel - Reactor Building Venti- lation High Radiation Refuleing Zone	<100 nr/hr or downscale	F	1.	l 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 Heaters	Charcoal Heaters < 2000 ofm R. H. Heaters < 2000 ofm	H and (A or F)		Below 2000 cfm, trip setting charcoal heaters will turn on. Below 2000 cfm, trip setting R. H. heaters will shut off.
	2 (7)(8)	Instrument Channel SGTS Flow - Train B Heaters	Charcoal Heaters < 2000 cfm R.H. Heaters < 2000 cfm	H and (A or F)		heaters will turn on. Below 2000 cfm, trip setting R.H. heaters will shut off.
	2 (7)(8) Instrument Channel SOTS Flow - Train C Heaters	Charcoal Heaters≤ 2000 c R.H. Heaters≤ 2000 cfm	fm H and (A or F)	1. 2.	Below 2000 cnn, trip setting charcoa heaters will turn on.



TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-260 '

BROWNS FERRY NUCLEAR PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 49 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 August 27, 1979, 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.

 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 License No. DPR-52 is hereby amended to read as follows:

(2) <u>Technical Specifications</u>

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 49, 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 its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Thomas K. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment: Changes to the Technical Specifications

Date of Issuance: November 9, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 49 FACILITY OPERATING LICENSE NO. DPR-52

DOCKET NO. 50-260

Revise Appendix A as follows:

Remove the following pages and replace with identically numbered pages:

55/56

The underlined page is the page being changed; the marginal line on this page denotes the area being changed. The overleaf page is provided for convenience.

TABLE 3.2.A
PRIMARY CONTAINMENT AND REACTOR BUILDING ISOLATION INSTRUMENTATION

Hisimm No. Operable Per Trip Sye (1)	Y unct lon	Trip Level Setting	Action (1)	Reserva
1	Instrument Channel Reactor Low Water Level (6)	> 538" above vessel sero	A or (B and E)	 Below trip setting does the following: Initiates Reactor Building Isolation Initiates Primary Containment Isolation Initiates SCTS
• .	Instrument Channel - Reactor High Pressure	100 <u>+</u> 15 peig	מ	 Above trip setting isolates the shutdown cooling suction valves of the SHR system.
2 55	Instrument Channel - Reactor Low Water Level (LIS-)-56A-D, SW #1)	> 470 above vessel zero.	A	 Below trip setting initiates Hain Steam Line Isolation
1 2	Instrument Channel - High Drywell Pressure (6) (PS-64-56A-D)	₹ 2.5 psig	A or (E and E)	1. Above trip setting does the following: a. Initiates Reactor Building Isolation b. Initiates Primary Contain At Isolation c. Initiates SCTS
2	Instrument Channel High Radiation Hain Steam Line Tunnel (6)	3 times formal rated full power background	В	1. Above trip setting initiates Main Steam Line Isolation
2	Instrument Channel - Low Pressure Hain Steam Line	≥825 psig (4)	•	1. Below trip setting initiates Hain Steam Line Isolation
2(3)	Instrument Channel - High Flow Hain Steam Line	140% of rated steam flo	M B	1. Above trip setting initiates Hein Steam Line Isolation

oper:	able Per Sys (1)	Function	Trip Level Setting	Action (1)	Remarks
	5	Instrument Channel - Main Steam Line Tunnel High Temperature	≤ 200°F	В	1. Above trip setting initiates Main Steam Line Isolation
•	2	Instrument Channel - Reactor Water Cleanup System Floor Drain High Temperature	160 - 180°F	С	 Above trip setting initiates Isolation of Reactor Water Cleanup Line 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	<pre>< 100 mr/hr or downscale</pre>	G	 l upscale or 2 downscale will a. Initiate SGTS b. Isolate reactor zone and refuleing floor. c. Close atmosphere control syste
	1	Instrument Channel - Reactor Building Venti- lation High Radiation Refuleing Zone	< 100 mr/hr or downscale	F	 l 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 Heaters	Charcoal Heater < 2000 cfm R. H. Heaters < 2000 cfm	H and (A or F)	 Below 2000 cfm, trip setting chard heaters will turn on. Below 2000 cfm, trip setting R. H. heaters will shut off.
	2 (7)(8)	Instrument Channel SGTS Flow - Train B Heaters	Charcoal Heaters < 2000 cfm R.H. Heaters < 2000 cfm	H and (A or F)	 Below 2000 cfm, trip setting chard heaters will turn on. Below 2000 cfm, trip setting R.H. heaters will shut off.
	2 (7)(8)	Instrument Channel SGTS Flow - Train C Heaters	Charcoal Heaters 2000 c R.H. Heaters 2000 cfm	M H and (A or F)	 Below 2000 cfm, trip setting chard heaters will turn on. Below 2000 cfm, trip setting R.H. heaters will shut off.

Minimum No.



TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-296

BROWNS FERRY NUCLEAR PLANT, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 26 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 August 27, 1979, 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 License No. DPR-68 is hereby amended to read as follows:

(2) <u>Technical Specifications</u>

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 26, 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 its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Thomas A. Ippolito, Chief Operating Reactors Branch #3 Division of Operating Reactors

Attachment: Changes to the Technical Specifications

Date of Issuance: November 9, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 26 FACILITY OPERATING LICENSE NO. DPR-68

DOCKET NO. 50-296

Revise Appendix A as follows:

Remove the following page and replace with the identically numbered page:

57

The marginal line on the above page indicates the area being changed.

TABLE 3.2.A
PRIMARY CONTAINMENT AND REACTOR BUILDING ISOLATION INSTRUMENTATION

Minimum No. Operable Per Trip Sys. (1).	Punction	Trip Level Setting	Action (1)	Remarks
2	Instrument Channel - Reactor Low Water Level (6)	≥ 538* above vessel zero	A or (B and E)	 Below trip setting does the following: a. Initiates Reactor Building Isolation b. Initiates Primary Containment Isolation c. Initiates SGTS
1	Instrument Channel - Reactor High Pressure	100 <u>*</u> 15 psig	D	 Above trip setting isolates the shutdown cooling suction valves of the RHR system.
2	Instrument Channel - Reactor Low Water Level (LIS-3-56A-D, SW #1)	2 470 above vessel zero	A .	 Below trip setting initiates Main Steam Line Isolation
2 2 3	Instrument Channel - High Drywell Pressure (6) (PS-64-56A-D)	≤ 2.5 psig	A or (B and E)	1. Above trip setting does the following: a. Initiates Reactor Building Isolation b. Initiates Primary Containment Isolation c. Initiates SGTS
2	Instrument Channel - High Radiation Main Steam Line Tunnel (6)	5 3 times normal rated full power background	В	 Above trip setting initiates Main Steam Line Isolation
2	Instrument Channel - Low Pressure Main Steam Line	2 850 paig (9)	В	 Below trip setting initiates Main Steam Line Isolation
2 (3)	Instrument Channel - High Flow Main Steam Line	≤ 140% of rated steam flo	ом В	 Above trip setting initiates Main Steam Line Isolation
2	Instrument Channel - Main Steam Line Tunnel High Temperature	≤ 200°F	В	1. Above trip setting initiates Main Steam Line Isolation.



SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 54 TO FACILITY OPERATING LICENSE NO. DPR-33

AMENDMENT NO. 49 TO FACILITY OPERATING LICENSE NO. DPR-52

AMENDMENT NO. 26 TO FACILITY OPERATING LICENSE NO. DPR-68

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNITS NOS. 1, 2 AND 3

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

1.0 Introduction

By letter dated August 27, 1979 (TVA BFNP TS 129), the Tenessee Valley Authority (the licensee or TVA) requested changes to the Technical Specifications (Appendix A) appended to Facility Operating Licenses Nos. DPR-33, DPR-52 and DPR-68 for the Browns Ferry Nuclear Plant, Units Nos. 1, 2 and 3. The proposed amendments and revised Technical Specifications would increase the high drywell pressure trip level setting from 2.0 psig to 2.5 psig.

2.0 Discussion

As a result of recent structural analyses performed in conjunction with a generic review of pool dynamic loads for Mark I pressure - suppression containments, the NRC staff determined that the consideration of pool dynamic loads resulting from a postulated loss-of-coolant accident had reduced the margin of safety in the containment design for the Browns Ferry Nuclear Plant. Subsequently, the licensee agreed to institute a "differential pressure control" to mitigate the pool dynamic loads and thereby restore the margin of safety in the containment design. The differential pressure control approach establishes a positive pressure between the drywell and torus regions of the containment which reduces the height of the water leg in the downcomers and subsequently reduces the hydrodynamic loads.

The differential pressure control procedure establishes approximately a 1.3 psig pressure in the drywell. The licensee indicated that the proximity of this pressure to the 2.0 psig high drywell pressure trip setpoint may result in inadvertent initiation of scram and core spray injection signals. Accordingly, in a letter dated August 27, 1979, the Tennessee Valley Authority requested a Technical Specification change for the high drywell pressure setpoint from 2.0 psig to 2.5 psig.

3.0 Evaluation

The high drywell pressure trip signal is used to initiate primary containment isolation and serves as a backup or conjunctive signal to initiate the ECCS systems. While it is proposed to raise the trip signal setpoint value from 2.0 psig to 2.5 psig, the differential pressure between drywell ambient and the trip setting remain approximately the same (i.e., about 1.0 psi).

We have reviewed the proposed change with respect to the time to achieve containment isolation, the performance of the ECCS systems, and the containment response to a postulated loss-of-coolant accident (LOCA). The higher initial containment pressure will slightly improve the ECCS performance due to an increase in the net positive pump suction head. In addition, the change in the containment isolation time and the containment pressure response will be small since they are primarily a function of the differential pressure between drywell ambient and the trip setting. The margin between the containment design and the calculated results for a spectrum of breaks is sufficiently large to accommodate the small changes associated with the higher setpoint.

Fuel peak clad temperatures would be unaffected in the event of the design basis accident by the proposed 0.5 psi increase in containment ambient pressure as the rate of discharge from a postulated double-ended pipe rupture would be at choked-flow conditions and independent of discharge pressure.

Based on our review, we find the licensee's proposed change to increase the high drywell pressure setpoint from 2.0 psig to 2.5 psig acceptable.

4.0 Environmental Considerations

We have determined that these amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that these amendments involve an action which is insignificant from the standpoint of environmental impact, and pursuant to $10~\rm CFR$ Section 51.5(d)(4) that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

5.0 Conclusion

We have concluded that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) 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.

Dated: November 9, 1979

UNITED STATES NUCLEAR REGULATORY COMMISSION DOCKET NOS. 50-259, 50-260 AND 50-296 TENNESSEE VALLEY AUTHORITY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY OPERATING LICENSES

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 54 to Facility Operating License No. DPR-33, Amendment No. 49 to Facility Operating License No. DPR-52 and Amendment No. 26 to Facility Operating License No. DPR-68 issued to Tennessee Valley Authority (the licensee), for operation of the Browns Ferry Nuclear Plant, Units Nos. 1, 2 and 3, located in Limestone County, Alabama. The amendments are effective as of the date of issuance.

The amendments change the Technical Specifications to increase the high drywell pressure trip level setting from 2.0 psig to 2.5 psig to reduce the likelihood of unnecessary reactor trip and ECCS initiation lighals.

The application for the amendments complies with the stancards 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. Prior public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant to 10 CFR Section 51.5(d)(4) an environmental impact appraisal need not be prepared in connection with issuance of these amendments.

For further details with respect to this action, see (1) the application for amendments dated August 27, 1979, (2) Amendment No. 54 to License No. DPR-33, Amendment No. 49 to License No. DPR-52, and Amendment No. 26 to License No. DPR-68, and (3) the Commission's related Safety Evaluation.

All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Athens Public Library, South and Forrest, Athens, Alabama 35611. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 9 day of November 1979.

FOR THE NUCLEAR REGULATORY COMMISSION

Thomas A. Ippolito, Chief Operating Reactors Branch #3 Division of Operating Reactors