

July 17, 1987

Dockets Nos. 50-259/260/296

Mr. S. A. White
Manager of Nuclear Power
Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

Dear Mr. White:

SUBJECT: REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENTS
(TAC 64706, 64707, AND 64708)

Re: Browns Ferry Nuclear Plant, Units 1, 2, and 3

The Commission has issued the enclosed Amendments Nos. 134, 130, and 105 to Facility Operating Licenses Nos. DPR-33, DPR-52 and DPR-68 for the Browns Ferry Nuclear Plant, Units 1, 2 and 3, respectively. These amendments are in response to your application dated February 9, 1987 (TS-226). The amendments change the Technical Specifications to delete an inappropriate action from Table 3.1.A, Reactor Protection System (SCRAM) Instrumentation Requirements.

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:

John A. Zwolinski, Assistant Director
for Projects
Division of TVA Projects
Office of Special Projects

Enclosures:

1. Amendment No. 134 to License No. DPR-33
2. Amendment No. 130 to License No. DPR-52
3. Amendment No. 105 to License No. DPR-68
4. Safety Evaluation

cc w/enclosures:
See next page

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Mr. S. A. White
Tennessee Valley Authority

Browns Ferry Nuclear Plant
Units 1, 2, and 3

CC:

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State Health Officer
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State Office Building
Montgomery, Alabama 36130



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. 134
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 February 9, 1987, 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.

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P PDR

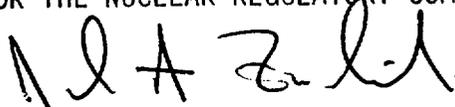
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-33 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 134, 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



John A. Zwolinski, Assistant Director
for Projects
Division of TVA Projects
Office of Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 17, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 134

FACILITY OPERATING LICENSE NO. DPR-33

DOCKET NO. 50-259

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change.

REMOVE

3.1/4.1-3
3.1/4.1-4

INSERT

3.1/4.1-3
3.1/4.1-4

TABLE 3.1.A
REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENTS

Min. No. of Operable Instr. Channels Per Trip System (1)(23)	Trip Function	Trip Level Setting	Shut-down	Modes in Which Function Must Be Operable			Action (1)
				Refuel (7)	Startup/Hot Standby	Run	
1	Mode Switch in Shutdown		X	X	X	X	1.A
1	Manual Scram		X	X	X	X	1.A
3	IRM (16) High Flux	<120/125 Indicated on scale	X(22)	X(22)	X	(5)	1.A
3	Inoperable			X	X	(5)	1.A
2	APRM (16) (24) (25) High Flux (Flow Biased)	See Spec. 2.1.A.1				X	1.A or 1.B
2	High Flux (Fixed Trip)	< 120%				X (15)	1.A or 1.B
2	High Flux Inoperative	< 15% rated power (13)		X(21)	X(17)	X	1.A
2	Downscale	> 3 Indicated on Scale		X(21)	X(17)	X	1.A
2	High Reactor Pressure	≤ 1055 psig		(11)	(11)	X(12)	1.A or 1.B
2	High Reactor Pressure	≤ 1055 psig		X(10)	X	X	1.A
2	High Drywell Pressure (14)	≤ 2.5 psig		X(8)	X(8)	X	1.A
2	Reactor Low Water Level (14)	≥ 538" above vessel zero	X	X	X	X	1.A

TABLE 3.1.A
 REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENTS

Min. No. of Operable Instr. Channels Per Trip System (1)(23)	Trip Function	Trip Level Setting	Shut-down	Modes in Which Function Must Be Operable			Action (1)
				Refuel (7)	Startup/Hot Standby	Run	
2	High Water Level in West Scram Discharge Tank (LS-85-45A-D)	≤ 50 Gallons	X(2)	X(2)	X	X	1.A
2	High Water Level in East Scram Discharge Tank (LS-85-45E-H)	≤ 50 Gallons	X(2)	X(2)	X	X	1.A
4	Main Steam Line Isolation Valve Closure	≤10% Valve Closure		X(3)(6)	X(3)(6)	X(6)	1.A or 1.C
2	Turbine Control Valve Fast Closure or Turbine Trip	≥550 psig				X(4)	1.A or 1.D
4	Turbine Stop Valve Closure	≤10% Valve Closure				X(4)	1.A or 1.D
2	Turbine First Stage Pressure Permissive	not ≥154 psig		X(18)	X(18)	X(18)	1.A or 1.D (19)
2	Main Steam Line High Radiation (14)	3 X Normal Full Power Background (20)		X(9)	X(9)	X(9)	1.A or 1.C

BFN-Unit 1

BFN-Unit 1

3.1/4.1-4

Amendment No. 134



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. 130
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 February 9, 1987, 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.

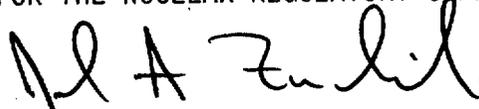
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-52 is hereby amended to read as follows:

(2) Technical Specifications

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



John A. Zwolinski, Assistant Director
for Projects
Division of TVA Projects
Office of Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 17, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 130

FACILITY OPERATING LICENSE NO. DPR-52

DOCKET NO. 50-260

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change.

REMOVE

3.1/4.1-3
3.1/4.1-4

INSERT

3.1/4.1-3
3.1/4.1-4

TABLE 3.1.A
REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENTS

Min. No. of Operable Instr. Channels Per Trip System (1) (23)	Trip Function	Trip Level Setting	Modes in which Function Must Be Operable			Run	Action (1)
			Shut-down	Refuel (7)	Startup/Hot Standby		
2	High Water Level In West Scram Discharge Tank (LS-85-45A-D)	≤ 50 Gallons	X(2)	X(2)	X	X	1.A
2	High Water Level In East Scram Discharge Tank (LS-85-45E-H)	≤ 50 Gallons	X(2)	X(2)	X	X	1.A
4	Main Steam Line Isolation Valve Closure	≤10% Valve Closure				X(6)	1.A or 1.C
2	Turbine Control Valve Fast Closure or Turbine Trip	≥550 psig				X(4)	1.A or 1.D
4	Turbine Stop Valve Closure	≤10% Valve Closure				X(4)	1.A or 1.D
2	Turbine First Stage Pressure Permissive (PIS-1-81A&B, PIS-1-91A&B)	not ≥154 psig		X(18)	X(18)	X(18)	1.A or 1.D (19)
2	Main Steam Line High Radiation (14)	3 X Normal Full Power Background (20)		X(9)	X(9)	X(9)	1.A or 1.C
2	Low Scram Pilot Air Header Pressure	≥50 psig	X(2)	X(2)	X	X	1.A

BFN-Unit 2

TABLE 3.1.A
 REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENTS

Min. No. of Operable Instr. Channels Per Trip System (1)(23)	Trip Function	Trip Level Setting	Shut-down	Modes in which Function Must Be Operable			Action (1)
				Refuel (7)	Startup/Hot Standby	Run	
1	Mode Switch in Shutdown		X	X	X	X	1.A
1	Manual Scram		X	X	X	X	1.A
3	IRM (16) High Flux	<120/125 Indicated on scale	X(22)	X(22)	X	(5)	1.A
3	Inoperable			X	X	(5)	1.A
2	APRM (16) (24) (25) High Flux (Flow Biased)	See Spec. 2.1.A.1				X	1.A or 1.B
2	High Flux (Fixed Trip)	< 120%				X (15)	1.A or 1.B
2	High Flux Inoperative	< 15% rated power (13)		X(21)	X(17)	X	1.A
2	Downscale	> 3 Indicated on Scale		X(21)	X(17)	X	1.A
2	High Reactor Pressure (PIS-3-22AA, BB, C, D)	< 1055 psig		(11)	(11)	X(12)	1.A or 1.B
2	High Reactor Pressure (PIS-3-22AA, BB, C, D)	< 1055 psig		X(10)	X	X	1.A
2	High Drywell Pressure (PIS-64-56 A-D)	≤ 2.5 psig		X(8)	X(8)	X	1.A
2	Reactor Low Water Level (LIS-3-203 A-D)	≥ 538" above vessel zero		X	X	X	1.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. 105
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 February 9, 1987, 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.

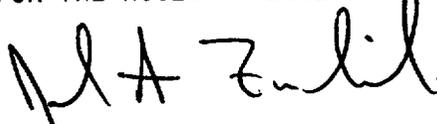
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-68 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 105, 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



John A. Zwolinski, Assistant Director
for Projects
Division of TVA Projects
Office of Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 17, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 105

FACILITY OPERATING LICENSE NO. DPR-68

DOCKET NO. 50-296

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change.

REMOVE

3.1/4.1-2
3.1/4.1-3

INSERT

3.1/4.1-2
3.1/4.1-3

TABLE 3.1.A
 REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENTS

Min. No. of Operable Instr. Channels Per Trip System (1)(23)	Trip Function	Trip Level Setting	Shut-down	Modes in Which Function Must Be Operable			Action (1)
				Refuel (7)	Startup/Hot Standby	Run	
2	High Water Level in West Scram Discharge Tank (LS-85-45A-D)	≤ 50 Gallons	X(2)	X(2)	X	X	1.A
2	High Water Level in East Scram Discharge Tank (LS-85-45E-H)	≤ 50 Gallons	X(2)	X(2)	X	X	1.A
4	Main Steam Line Isolation Valve Closure	≤10% Valve Closure				X(6)	1.A or 1.C
2	Turbine Control Valve Fast Closure or Turbine Trip	≥550 psig				X(4)	1.A or 1.D
4	Turbine Stop Valve Closure	≤10% Valve Closure				X(4)	1.A or 1.D
2	Turbine First Stage Pressure Permissive	not ≥154 psig		X(18)	X(18)	X(18)	1.A or 1.D (19)
2	Main Steam Line High Radiation (14)	3 X Normal Full Power Background (20)		X(9)	X(9)	X(9)	1.A or 1.C

BFN-Unit 3

TABLE 3.1.A
 REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENTS

Min. No. of Operable Instr. Channels Per Trip System (1)(23)	Trip Function	Trip Level Setting	Shut-down	Modes in Which Function Must Be Operable			Action (1)
				Refuel (7)	Startup/Hot Standby	Run	
1	Mode Switch in Shutdown		X	X	X	X	1.A
1	Manual Scram		X	X	X	X	1.A
3	IRM (16) High Flux	≤120/125 Indicated on scale	X(22)	X(22)	X	(5)	1.A
3	Inoperative			X	X	(5)	1.A
2	APRM (16)(24)(25) High Flux (Fixed Trip)	≤ 120%				X	1.A or 1.B
2	High Flux (Flow Biased)	See Spec. 2.1.A.1				X	1.A or 1.B
2	High Flux Inoperative	< 15% rated power (13)		X(21)	X(17)	(15)	1.A
2	Downscale	≥ 3 Indicated on Scale		X(21)	X(17)	X	1.A
2	High Reactor Pressure	≤ 1055 psig		(11)	(11)	X(12)	1.A or 1.B
2	High Reactor Pressure	≤ 1055 psig		X(10)	X	X	1.A
2	High Drywell Pressure (14)	≤ 2.5 psig		X(8)	X(8)	X	1.A
2	Reactor Low Water Level (14)	≥ 538" above vessel zero	X	X	X	X	1.A

BFN-Unit 3



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

SAFETY EVALUATION BY THE OFFICE OF SPECIAL PROJECTS

SUPPORTING AMENDMENT NO. 134 TO FACILITY OPERATING LICENSE NO. DPR-33

AMENDMENT NO. 130 TO FACILITY OPERATING LICENSE NO. DPR-52

AMENDMENT NO. 105 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 February 9, 1987, (TS-226) the Tennessee Valley Authority (TVA or the licensee) requested amendments to Facility Operating Licenses Nos. DPR-33, DPR-52, and DPR-68 for the Browns Ferry Nuclear Plant, Unit 1, 2, and 3 (BFN). The amendments would change the Technical Specifications (TS) to delete one of the alternative actions specified in Table 3.1.A when the Average Power Range Monitor (APRM) High Flux or Inoperative trip channels are inoperable. It also makes minor clarifications and improvements.

2.0 EVALUATION

2.1 Deletion of Alternative Action

The amendments would revise Table 3.1.A, page 3.1/4.1-3 (Units 1 and 2) and page 3.1/4.1-2 (Unit 3) to delete alternative action "or 1.B" from the action column for the APRM, High Flux and APRM, Inoperative trip function.

The APRM, High Flux and Inoperative trip functions are required to be operable by the TS in the Run and Startup/Hot Standby modes of reactor operation. If the APRM, High Flux or Inoperative trip functions are inoperable in the RUN mode of reactor operation, TS allow action 1.B to be taken which results in the plant being placed in the Startup/Hot Standby Mode of operation. Taking this action, however, as the TS are currently written, would require the APRM, High Flux and the Inoperative trip functions to be operable. This ambiguity could lead to confusion by the operators. The deletion of option 1.B is appropriate in order to remove the ambiguity and would result in additional restriction, not allowing action 1.B to be taken, thereby improving the margin of nuclear safety. Therefore, the staff finds the change to the TS acceptable.

2.2 Clarifications and Improvements

The amendments would revise Table 3.1.A, page 3.1/4.1-4 (Units 1 and 2) and page 3.1/4.1-3 (Unit 3) to make two administrative changes.

The first change adds "1.A or 1.D" to the Action column for the Turbine First Stage Pressure Permissive trip function. The action column currently references note 19 which specifies when actions 1.A or 1.D are required. This addition in the Action column is consistent with the content of and clarifies the intent of note 19 and enhances consistency throughout the table.

For the second change note 2 is added in the Shutdown column for the High Water Level in West and East Scram Discharge Tanks trip functions. Since the note itself currently specifies its applicability during shutdown, the intent of the requirement is not changed and the addition of the note enhances table consistency with and clarifies the intent of note 2. Therefore, the staff finds the above changes acceptable.

3.0 ENVIRONMENTAL CONSIDERATIONS

The amendments involve a change to a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. 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 is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that these 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 nor environmental assessment need be prepared in connection with the issuance of these amendments.

4.0 CONCLUSION

The staff has 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 nor to the health and safety of the public.

Principal Contributor: John Stang

Dated: July 17, 1987