



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. 125  
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, 1985, 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:

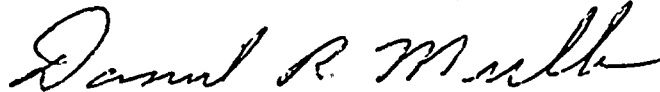
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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 125, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective 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: December 18, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 125

FACILITY OPERATING LICENSE NO. DPR-33

DOCKET NO. 50-259

Revise Appendix A as follows:

1. Remove the following page.

248A

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

37

40

60

256

315

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

TABLE 4.1.A  
 REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION FUNCTIONAL TESTS  
 MINIMUM FUNCTIONAL TEST FREQUENCIES FOR SAFETY INSTR. AND CONTROL CIRCUITS

	<u>Group (2)</u>	<u>Functional Test</u>	<u>Minimum Frequency (3)</u>
Mode Switch in Shutdown	A	Place Mode Switch in Shutdown	Each Refueling Outage
Manual Scram	A	Trip Channel and Alarm	Every 3 Months
<sup>IRM</sup> High Flux	C	Trip Channel and Alarm (4)	Once/Week During Refueling and Before Each Startup
Inoperative	C	Trip Channel and Alarm (4)	Once/Week During Refueling and Before Each Startup
<sup>APRM</sup> High Flux (15% scram)	C	Trip Output Relays (4)	Before Each Startup and Weekly When Required to be Operable
High Flux (Flow Biased)	B	Trip Output Relays (4)	Once/Week
High Flux (Fixed Trip)	B	Trip Output Relays (4)	Once/Week
Inoperative	B	Trip Output Relays (4)	Once/Week
Downscale	B	Trip Output Relays (4)	Once/Week
Flow Bias	B	(6)	(6)
High Reactor Pressure	A	Trip Channel and Alarm	Once/Month (1)
High Drywell Pressure	A	Trip Channel and Alarm	Once/Month (1)
Reactor Low Water Level	A	Trip Channel and Alarm	Once/Month (1)
High Water Level in Scram Discharge Tank			
Float Switches (LS-85-45C-F)	A	Trip Channel and Alarm	Once/Month
Electronic Level Switches (LS-85-45A, B, G, H)	A	Trip Channel and Alarm	Once/Month
Main Steam Line High Radiation	B	Trip Channel and Alarm (4)	Once/3 months (8)



TABLE 4.1.B  
 REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION CALIBRATION  
 MINIMUM CALIBRATION FREQUENCIES FOR REACTOR PROTECTION INSTRUMENT CHANNELS

<u>Instrument Channel</u>	<u>Group (1)</u>	<u>Calibration</u>	<u>Minimum Frequency (2)</u>
IRM High Flux	C	Comparison to APRM on Controlled Startups (6)	Note (4)
-APRM High Flux Output Signal	B	Heat Balance	Once/7 days
Flow Bias Signal	B	Calibrate Flow Bias Signal (7)	Once/Operating cycle
LPRM Signal	B	TIP System Traverse (8)	Every 1000 Effective Full Power Hours
High Reactor Pressure	A	Standard Pressure Source	Every 3 Months
High Drywell Pressure	A	Standard Pressure Source	Every 3 Months
Reactor Low Water Level	A	Pressure Standard	Every 3 Months
High Water Level in Scram Discharge Volume			
Electronic Lvl Switches (LS-85-45-A,B,G,H)	A	Calibrated Water Column (5)	Note (5)
Float Switches (LS-85-45C-F)	A	Calibrated Water Column (5)	Note (5)
Main Steam Line Isolation Valve Closure	A	Note (5)	Note (5)
Main Steam Line High Radiation	B	Standard Current Source (3)	Every 3 Months
Turbine First Stage Pressure Permissive (PT-1-81A,B & PT-1-91A,B)	B	Standard Pressure Source	Once/Operating Cycle(9)
Turbine Control Valve Fast Closure or Turbine Trip	A	Standard Pressure Source	Once/Operating Cycle
Turbine Stop Valve Closure	A	Note (5)	Note (5)

Amendment No. 125

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NOTES FOR TABLE 3.2.A

1. Whenever the respective functions are required to be operable, there shall be two operable or tripped trip systems for each function.

If the first column cannot be met for one of the trip systems, that trip system or logic for that function shall be tripped (or the appropriate action listed below shall be taken). If the column cannot be met for all trip systems, the appropriate action listed below shall be taken.

- A. Initiate an orderly shutdown and have the reactors in Cold Shutdown Condition in 24 hours.
  - B. Initiate an orderly load reduction and have Main Steam Lines isolated within eight hours.
  - C. Isolate Reactor Water Cleanup System.
  - D. Isolate Shutdown Cooling
  - E. Initiate primary containment isolation within 24 hours.
  - F. The handling of spent fuel will be prohibited and all operations over spent fuels and open reactor wells shall be prohibited.
  - G. Isolate the reactor building and start the standby gas treatment system.
  - H. Immediately perform a logic system functional test on the logic in the other trip systems and daily thereafter not to exceed 7 days.
  - I. No action required. Reactor zone walls and ceiling designed above suction pressure of the SGTS.
  - J. Withdraw TIP.
  - K. Manually isolate the affected lines. Refer to section 4.2.E for the requirements of an inoperable system.
  - L. If one SGTS train is inoperable take actions H or action A and F. If two SGTS trains are inoperable take actions A and F.
2. When it is determined that a channel is failed in the unsafe condition, the other channels that monitor the same variable shall be functionally tested immediately before the trip system or logic for that function is tripped. The trip system or the logic for that function may remain untripped for short periods of time to allow functional testing of the other trip system or logic for that function.
  3. There are four sensors per steam line of which at least one sensor per trip system must be operable.
  4. Only required in Run Mode (interlocked with Mode Switch).
  5. Not required in Run Mode (bypassed by mode switch).

TABLE 3.7.B  
TESTABLE PENETRATIONS WITH DOUBLE O-RING SEALS

<u>Penetration No.</u>	<u>Identification</u>
X-1A	Equipment Hatch
X-1B	Equipment Hatch
X-4	Head Access, Drywell
X-6	CRD Removal Hatch
X-25	Flange on 64-18
X-25	Flange on 64-19
X-25	Flange on 84-8A
X-25	Flange on 84-8D
X-26	Flange on 64-31
X-26	Flange on 64-34
X-35A	TIP Drive
X-35B	TIP Drive
X-35C	TIP Drive
X-35D	TIP Drive
X-35E	TIP Drive
X-35F	TIP Indexer Purge
X-35G	Spare
X-47	Power Operation Test
X-200A	Suppression Chamber Access Hatch
X-200B	Suppression Chamber Access Hatch
-	Drywell Head
-	Shear Lug No. 1
-	Shear Lug No. 2
-	Shear Lug No. 3
-	Shear Lug No. 4
-	Shear Lug No. 5
-	Shear Lug No. 6
-	Shear Lug No. 7
-	Shear Lug No. 8
X-205	Flange on 64-20
X-205	Flange on 64-21
X-205	Flange on 84-8B
X-205	Flange on 84-8C
X-205	Flange on 76-19
X-205	Flange on 76-18
X-223	Suppression Chamber Access Hatch
X-231	Flange on 64-29
X-231	Flange on 64-32





3.11 FIRE PROTECTION SYSTEMS

Applicability: Applies to the operating status of the applicable fire suppression and/or detection systems for the reactor building, diesel generator buildings, control bay, intake pumping station, cable tunnel to the intake pumping station, and cable trays along the south wall of the turbine building, elevation 586.

Objective:

To assure availability of Fire Protection Systems.

Specification:

A. High Pressure Fire Protection System

1. The High Pressure Fire Protection System shall have:
  - a. Two (2) high pressure fire pumps operable and aligned to the high pressure fire header.
  - b. Automatic initiation logic operable.

4.11 FIRE PROTECTION SYSTEMS

Applicability: Applies to the surveillance requirements of the applicable fire suppression and/or detection systems for the reactor building, diesel generator buildings, control bay, intake pumping station, cable tunnel to the intake pumping station, and cable trays along the south wall of the turbine building, elevation 586 when the corresponding limiting conditions for operation are in effect.

Objective:

To verify the operability of the Fire Protection Systems.

Specification:

A. High Pressure Fire Protection System

1. High Pressure Fire Protection System Testing:

<u>Item</u>	<u>Frequency</u>
a. Simulated automatic and manual actuation of high pressure pumps and automatic valve operability	Once/year
b. Pump Operability	Once/month
c. Deleted	
d. Pump capability	Once/3 year



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. 120  
License No. DPR-52

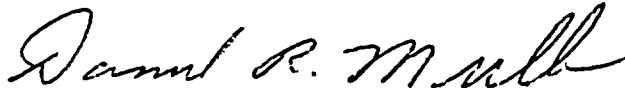
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Tennessee Valley Authority (the licensee) dated April 8, 1985, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules 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. 120, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective 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: December 18, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 120

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.

60

315

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

NOTES FOR TABLE 3.2.A

1. Whenever the respective functions are required to be operable, there shall be two operable or tripped trip systems for each function.

If the first column cannot be met for one of the trip systems, that trip system or logic for that function shall be tripped (or the appropriate action listed below shall be taken). If the column cannot be met for all trip systems, the appropriate action listed below shall be taken.

- A. Initiate an orderly shutdown and have the reactors in Cold Shutdown Condition in 24 hours.
  - B. Initiate an orderly load reduction and have Main Steam Lines isolated within eight hours.
  - C. Isolate Reactor Water Cleanup System.
  - D. Isolate Shutdown Cooling
  - E. Initiate primary containment isolation within 24 hours.
  - F. The handling of spent fuel will be prohibited and all operations over spent fuels and open reactor wells shall be prohibited.
  - G. Isolate the reactor building and start the standby gas treatment system.
  - H. Immediately perform a logic system functional test on the logic in the other trip systems and daily thereafter not to exceed 7 days.
  - I. No action required. Reactor zone walls and ceiling designed above suction pressure of the SGTS.
  - J. Withdraw TIP.
  - K. Manually isolate the affected lines. Refer to section 4.2.E for the requirements of an inoperable system.
  - L. If one SGTS train is inoperable take actions H or action A and F. If two SGTS trains are inoperable take actions A and F.
2. When it is determined that a channel is failed in the unsafe condition, the other channels that monitor the same variable shall be functionally tested immediately before the trip system or logic for that function is tripped. The trip system or the logic for that function may remain untripped for short periods of time to allow functional testing of the other trip system or logic for that function.
  3. There are four sensors per steam line of which at least one sensor per trip system must be operable.
  4. Only required in Run Mode (interlocked with Mode Switch).
  5. Not required in Run Mode (bypassed by mode switch).



LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11 FIRE PROTECTION SYSTEMS

4.11 FIRE PROTECTION SYSTEMS

Applicability: Applies to the operating status of the applicable fire suppression and/or detection systems for the reactor building, diesel generator buildings, control bay, intake pumping station, cable tunnel to the intake pumping station, and cable trays along the south wall of the turbine building, elevation 586.

Applicability: Applies to the surveillance requirements of the applicable fire suppression and/or detection systems for the reactor building, diesel generator buildings, control bay, intake pumping station, cable tunnel to the intake pumping station, and cable trays along the south wall of the turbine building, elevation 586 when the corresponding limiting conditions for operation are in effect.

Objective:

To assure availability of Fire Protection Systems.

Objective:

To verify the operability of the Fire Protection Systems.

Specification:

Specification:

A. High Pressure Fire Protection System

A. High Pressure Fire Protection System

1. The High Pressure Fire Protection System shall have:
  - a. Two (2) high pressure fire pumps operable and aligned to the high pressure fire header.
  - b. Automatic initiation logic operable.

1. High Pressure Fire Protection System Testing:

<u>Item</u>	<u>Frequency</u>
a. Simulated automatic and manual actuation of high pressure pumps and automatic valve operability	Once/year
b. Pump Operability	Once/month
c. Deleted	
d. Pump capability	Once/3 year





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. 96  
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, 1985, 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. 96, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective 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: December 18, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 96

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.

63

347

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



3. There are four sensors per steam line of which at least one sensor per trip system must be operable.
4. Only required in Run Mode (interlocked with Mode Switch).
5. Not required in Run Mode (bypassed by mode switch).
6. Channel shared by RPS and Primary Containment & Reactor Vessel Isolation Control System. A channel failure may be a channel failure in each system.
7. A train is considered a trip system.
8. Two out of three SGTS trains required. A failure of more than one will require action A and F.
9. There is only one trip system with auto transfer to two power sources.
10. Refer to Table 3.7.A and its notes for a listing of Isolation Valve Groups and their initiating signals.
11. A channel may be placed in an inoperable status for up to four hours for required surveillance without placing the trip system in the tripped condition provided at least one OPERABLE channel in the same trip system is monitoring that parameter.
12. A channel contains four sensors, all of which must be operable for the channel to be operable.

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11 FIRE PROTECTION SYSTEMS

4.11 FIRE PROTECTION SYSTEMS

Applicability: Applies to the operating status of the applicable fire suppression and/or detection systems for the reactor building, diesel generator buildings, control bay, intake pumping station, cable tunnel to the intake pumping station, and cable trays along the south wall of the turbine building, elevation 586.

Applicability: Applies to the surveillance requirements of the applicable fire suppression and/or detection systems for the reactor building, diesel generator buildings, control bay, intake pumping station, cable tunnel to the intake pumping station, and cable trays along the south wall of the turbine building, elevation 586 when the corresponding limiting conditions for operation are in effect.

Objective:

To assure availability of Fire Protection Systems.

Objective:

To verify the operability of the Fire Protection Systems.

Specification:

A. High Pressure Fire Protection System

A. High Pressure Fire Protection System

1. The High Pressure Fire Protection System shall have:

1. High Pressure Fire Protection System Testing:

- a. Two (2) high pressure fire pumps operable and aligned to the high pressure fire header.
- b. Automatic initiation logic operable.

<u>Item</u>	<u>Frequency</u>
a. Simulated automatic and manual actuation of high pressure pumps and automatic valve operability	Once/year
b. Pump Operability	Once/month
c. Deleted	
d. Pump capability	Once/3 year

