

July 8, 1985

Docket Nos. 50-259/260/296

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

Dear Mr. Parris:

The Commission has issued the enclosed Amendment Nos. 119, 114 and 90 to Facility Operating License 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 December 21, 1984 (TVA BFNP TS 206).

The amendments change the Technical Specifications to correct typographical errors and clarify mechanical vacuum pump requirements. The proposed amendments relating to shift overtime limitations will be addressed separately in future correspondence and have not been included.

A copy of the Safety Evaluation is also enclosed.

Sincerely,

Original signed by
Richard J. Clark

Richard J. Clark, Project Manager
Operating Reactors Branch #2
Division of Licensing

Enclosures:

1. Amendment No. 119 to License No. DPR-33
2. Amendment No. 114 to License No. DPR-52
3. Amendment No. 90 to License No. DPR-68
4. Safety Evaluation

cc w/enclosures:
See next page

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Mr. Hugh G. Parris
Tennessee Valley Authority
Browns Ferry Nuclear Plant, Units 1, 2 and 3

cc:

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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. 119
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 December 21, 1984, 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:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 119, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective within 90 days of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 8, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 119

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.

271
286
291

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

BASIS

Vacuum Relief

The purpose of the vacuum relief valves is to equalize the pressure between the drywell and suppression chamber and reactor building, so that the structural integrity of the containment is maintained. The vacuum relief system from the pressure suppression chamber to reactor building consists of two 100% vacuum relief breakers (2 parallel sets of 2 valves in series). Operation of either system will maintain the pressure differential less than 2 psig; the external design pressure. One reactor building vacuum breaker may be out of service for repairs for a period of seven days. If repairs cannot be completed within seven days, the reactor coolant system is brought to a condition where vacuum relief is no longer required.

When a drywell-suppression chamber vacuum breaker valve is exercised through an opening-closing cycle the position indicating lights in the control room are designed to function as specified below:

Initial and Final Condition	Check - On Green - On Red - Off	(Fully closed)
Opening Cycle	Check - Off Green - Off Red - On	(Cracked open) ($> 80^\circ$ Open) ($> 3^\circ$ Open)
Closing Cycle	Check - On Green - On Red - Off	(Fully Closed) ($< 80^\circ$ Open) ($< 3^\circ$ Open)

The valve position indicating lights consist of one check light on the check light panel which confirms full closure, one green light next to the hand switch which confirms 80° of full opening, and one red light next to the hand switch which confirms "near closure" (within 3° of full closure). Each light is on a separate switch. If the check light circuit is operable when the valve is exercised by its air operator there exists a confirmation that the valve will fully close. If the red light circuit is operable, there exists a confirmation that the valve will at least "nearly close" (within 3° of full closure). The green light circuit confirms the valve will fully open. If none of the lights change indication during the cycle, the air operator must be inoperable or the valve disc is stuck. For this case, a check light on and red light off confirms the disc is in a nearly closed position even if one of the indications is in error. Although the valve may be inoperable for full closure, it does not constitute a safety threat.

If the red light circuit alone is inoperable, the valve shall still be considered fully operable. If the green and red or the green light circuit alone is inoperable the valve shall be considered inoperable for

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

C. Mechanical Vacuum Pumps

1. Each mechanical vacuum pump shall be capable of being automatically isolated and secured on a signal of high radioactivity in the steam lines whenever the main steam isolation valves are open.
2. If a vacuum pump cannot meet the limits of 3.8.C.1, that vacuum pump shall be isolated.

D. Miscellaneous Radioactive Materials Sources

1. Source Leakage Test

Each sealed source containing radioactive material in excess of those quantities of byproduct material listed in 10 CFR 30.71 Schedule B and all other sources, including alpha emitters, in excess of 0.1 microcurie, shall be free of >0.005 microcurie of removable contamination. Each sealed source with removable contamination in excess of the above limit shall be immediately withdrawn from use and (a) either decontaminated and (b) disposed of in accordance with Commission Regulations.

C. Mechanical Vacuum Pumps

At least once during each operating cycle verify automatic securing and isolation of the mechanical vacuum pumps.

D. Miscellaneous Radioactive Materials Sources

1. Surveillance Requirements

Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the Commission or an agreement State, as follows:

- a. Each sealed source, except startup sources subject to core flux, containing radioactive material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months. The leakage test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample.
- b. The periodic leak test required does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage prior to any use or transfer to another user unless they have been leak tested within six months prior to the date of use or transfer. In the absence of a certification from a transferor indicating that a test has been made within six months prior to the transfer, sealed sources shall not be put into use until tested.
- c. Startup sources shall be leak tested prior to and following any repair or maintenance and before being subjected to core flux.

3.8.C/4.8.C Mechanical Vacuum Pump

The purpose of isolating the mechanical vacuum pump lines is to limit the release of activity from the main condenser. During an accident, fission products would be transported from the reactor through the main steam lines to the condenser. The fission product radioactivity would be sensed by the main steam line radioactivity monitors which initiate isolation.

4.8.A and 4.8.B BASES

The surveillance requirements given under Specification 4.8.A and 4.8.B provide assurance that liquid and gaseous wastes are properly controlled and monitored during any release of radioactive materials in the liquid and gaseous effluents. These surveillance requirements provide the data for the licensee and the Commission to evaluate the station's performance relative to radioactive wastes released to the environment. Reports on the quantities of radioactive materials released in effluents shall be furnished to the Commission on the basis of Section 6 of these technical specifications. On the basis of such reports and any additional information the Commission may obtain from the licensee or others, the Commission may from time to time require the licensee to take such actions as the Commission deems appropriate.

3.8.D and 4.8.D BASES

The objective of this specification is to assure that leakage from byproduct, source, and special nuclear radioactive material sources does not exceed allowable limits.



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. 114
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 December 21, 1984, 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. 114, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective within 90 days of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 8, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 114

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.

271
286
291

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

BASES

Vacuum Relief

The purpose of the vacuum relief valves is to equalize the pressure between the drywell and suppression chamber and reactor building so that the structural integrity of the containment is maintained. The vacuum relief system from the pressure suppression chamber to reactor building consists of two 100% vacuum relief breakers (2 parallel sets of 2 valves in series). Operation of either system will maintain the pressure differential less than 2 psig; the external design pressure. One reactor building vacuum breaker may be out of service for repairs for a period of seven days. If repairs cannot be completed within seven days, the reactor coolant system is brought to a condition where vacuum relief is no longer required.

When a drywell-suppression chamber vacuum breaker valve is exercised through an opening-closing cycle the position indicating lights in the control room are designed to function as specified below:

Initial and Final Condition	Check - On	(Fully closed)
	Green - On	
	Red - Off	
Opening Cycle	Check - Off	(Cracked open)
	Green - Off	(> 80° Open)
	Red - On	(> 3° Open)
Closing Cycle	Check - On	(Fully Closed)
	Green - On	(< 80° Open)
	Red - Off	< 3° Open)

The valve position indicating lights consist of one check light on the check light panel which confirms full closure, one green light next to the hand switch which confirms 80° of full opening and one red light next to the hand switch which confirms "near closure" (within 3" of full closure). Each light is on a separate switch. If the check light circuit is operable when the valve is exercised by its air operator there exists a confirmation that the valve will fully close. If the red light circuit is operable, there exists a confirmation that the valve will at least "nearly close" (within 3° of full closure). The green light circuit confirms the valve will fully open. If none of the lights change indication during the cycle, the air operator must be inoperable or the valve disc is stuck. For this case, a check light on and red light off confirms the disc is in a nearly closed position even if one of the indications is in error. Although the valve may be inoperable for full closure, it does not constitute a safety threat.

If the red light circuit alone is inoperable, the valve shall still be considered fully operable. If the green and red or the green light circuit alone is inoperable the valve shall be considered inoperable for

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

C. Mechanical Vacuum Pumps

1. Each mechanical vacuum pump shall be capable of being automatically isolated and secured on a signal of high radioactivity in the steam lines whenever the main steam isolation valves are open.
2. If a vacuum pump cannot meet the limits of 3.8.C.1, that vacuum pump shall be isolated.

D. Miscellaneous Radioactive Materials Sources

1. Source Leakage Test

Each sealed source containing radioactive material in excess of those quantities of byproduct material listed in 10 CFR 30.71 Schedule B and all other sources, including alpha emitters, in excess of 0.1 microcurie, shall be free of ≥ 0.005 microcurie of removable contamination. Each sealed source with removable contamination in excess of the above limit shall be immediately withdrawn from use and (a) either decontaminated and (b) disposed of in accordance with Commission Regulations.

C. Mechanical Vacuum Pumps

At least once during each operating cycle verify automatic securing and isolation of the mechanical vacuum pumps.

D. Miscellaneous Radioactive Materials Sources

1. Surveillance Requirements

Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the Commission or an agreement State, as follows:

- a. Each sealed source, except startup sources subject to core flux, containing radioactive material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months. The leakage test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample.
- b. The periodic leak test required does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage prior to any use or transfer to another user unless they have been leak tested within six months prior to the date of use or transfer. In the absence of a certification from a transferor indicating that a test has been made within six months prior to the transfer, sealed sources shall not be put into use until tested.
- c. Startup sources shall be leak tested prior to and following any repair or maintenance and before being subjected to core flux.

3.8.C/4.8.C Mechanical Vacuum Pump

The purpose of isolating the mechanical vacuum pump lines is to limit the release of activity from the main condenser. During an accident, fission products would be transported from the reactor through the main steam lines to the condenser. The fission product radioactivity would be sensed by the main steam line radioactivity monitors which initiate isolation.

4.8.A and 4.8.B BASES

The surveillance requirements given under Specification 4.8.A and 4.8.B provide assurance that liquid and gaseous wastes are properly controlled and monitored during any release of radioactive materials in the liquid and gaseous effluents. These surveillance requirements provide the data for the licensee and the Commission to evaluate the station's performance relative to radioactive wastes released to the environment. Reports on the quantities of radioactive materials released in effluents shall be furnished to the Commission on the basis of Section 6 of these technical specifications. On the basis of such reports and any additional information the Commission may obtain from the licensee or others, the Commission may from time to time require the licensee to take such actions as the Commission deems appropriate.

3.8.D and 4.8.D BASES

The objective of this specification is to assure that leakage from byproduct, source, and special nuclear radioactive material sources does not exceed allowable limits.



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. 90
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 December 21, 1984, 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. 90, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective within 90 days of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 8, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 90

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.

307
315

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

3.8 RADIOACTIVE MATERIALS

the stack or radwaste monitor, the reactors shall be in the hot shutdown condition within 24 hours for the stack and 10 days for the radwaste vent.

If these requirements are not satisfied for the reactor and turbine building vents, the affected reactor shall be in hot shutdown condition within 10 days.

C. Mechanical Vacuum Pumps

1. Each mechanical vacuum pump shall be capable of being automatically isolated and secured on a signal of high radioactivity in the steam lines whenever the main steam isolation valves are open.
2. If a vacuum pump cannot meet the limits of 3.8.C.1, that vacuum pump shall be isolated.

4.8 RADIOACTIVE MATERIALS**C. Mechanical Vacuum Pumps**

At least once during each operating cycle verify automatic securing and isolation of the mechanical vacuum pumps.

3.8.C/4.8.C Mechanical Vacuum Pump

The purpose of isolating the mechanical vacuum pump lines is to limit the release of activity from the main condenser. During an accident, fission products would be transported from the reactor through the main steam lines to the condenser. The fission product radioactivity would be sensed by the main steam line radioactivity monitors which initiate isolation.

4.8.A and 4.8.B BASES

The surveillance requirements given under Specification 4.8.A and 4.8.B provide assurance that liquid and gaseous wastes are properly controlled and monitored during any release of radioactive materials in the liquid and gaseous effluents. These surveillance requirements provide the data for the licensee and the Commission to evaluate the station's performance relative to radioactive wastes released to the environment. Reports on the quantities of radioactive materials released in effluents shall be furnished to the Commission on the basis of Section 6 of these technical specifications. On the basis of such reports and any additional information the Commission may obtain from the licensee or others, the Commission may from time to time require the licensee to take such actions as the Commission deems appropriate.

3.8.D and 4.8.D BASES

The objective of this specification is to assure that leakage from byproduct, source, and special nuclear radioactive material sources does not exceed allowable limits.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 119 TO FACILITY OPERATING LICENSE NO. DPR-33
AMENDMENT NO. 114 TO FACILITY OPERATING LICENSE NO. DPR-52
AMENDMENT NO. 90 TO FACILITY OPERATING LICENSE NO. DPR-68
TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2 AND 3
DOCKET NOS. 50-259, 50-260 AND 50-296

1.0 INTRODUCTION

By letter dated December 21, 1984 the Tennessee Valley Authority (the licensee/TVA) requested amendments to Facility Operating License Nos. DPR-33, DPR-52 and DPR-68 for the Browns Ferry Nuclear Plant, Units 1, 2 and 3. The amendments would clarify mechanical vacuum pump requirements and correct typographical errors.

2.0 EVALUATION

Drywell Vacuum Breaker Position Indication (Units 1 and 2 only)

The basis for TS 3.7.A and 4.7.A states that the drywell vacuum breaker valve position indicator green light comes on during a closing cycle when the valve position passes through the 30 degree position, and goes off during an opening cycle when the valve passes through the 80 degree position. The 30-degree figure is a typographical error. Both figures should be 80 degrees. These changes correct a typographical error and are acceptable.

Mechanical Vacuum Pumps

The TS specify limiting conditions for operation and surveillance requirements for a "mechanical vacuum pump." As stated in Final Safety Analysis Report (FSAR) Section 11.4.3, there are multiple vacuum pumps installed. The amendments change mechanical vacuum pump references from singular to plural. These changes provide clarification and are acceptable.

3.0 ENVIRONMENTAL CONSIDERATIONS

The amendments involve a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or a surveillance requirement. 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 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 these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: W. Long

Dated: July 8, 1985