

March 1, 1988

Docket 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: TECHNICAL SPECIFICATIONS CHANGE ON PARTIAL CLOSURE TEST OF THE MAIN STEAM ISOLATION VALVES (TAC 00176/177/178) (TS 229)

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

The Commission has issued the enclosed Amendments Nos. 146, 142, and 117 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 May 15, 1987. The amendments delete the requirement to perform a partial closure test of the main steam isolation valves twice per week.

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  
G. E. Gears for

Gary G. Zech, Assistant Director  
for Projects  
TVA Projects Division  
Office of Special Projects

Enclosures:

1. Amendment No. 146 to License No. DPR-33
2. Amendment No. 142 to License No. DPR-52
3. Amendment No. 117 to License No. DPR-68
4. Safety Evaluation

cc w/enclosures:  
See next page

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*7 Please note correction & question on SE.*

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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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Dr. Henry Myers, Science Advisor  
Committee on Interior  
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Chairman, Limestone County Commission  
P.O. Box 188  
Athens, Alabama 35611

Claude Earl Fox, M.D.  
State Health Officer  
State Department of Public Health  
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. 146  
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 May 15, 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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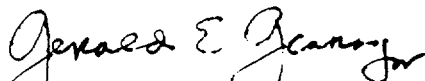
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-33 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 146, 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 its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Gary G. Zech, Assistant Director  
for Projects  
TVA Projects Division  
Office of Special Projects

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 1, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 146

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. Overleaf pages\* are provided to maintain document completeness.

REMOVE

3.7/4.7-17

3.7/4.7-18

INSERT

3.7/4.7-17\*

3.7/4.7-18

### 3.7/4.7 CONTAINMENT SYSTEMS

#### LIMITING CONDITIONS FOR OPERATION

#### SURVEILLANCE REQUIREMENTS

##### 3.7.C. Secondary Containment

4. If refueling zone secondary containment cannot be maintained the following conditions shall be met:
  - a. Handling of spent fuel and all operations over spent fuel pools and open reactor wells containing fuel shall be prohibited.
  - b. The standby gas treatment system suction to the refueling zone will be blocked except for a controlled leakage area sized to assure the achieving of a vacuum of at least 1/4-inch of water and not over 3 inches of water in all three reactor zones.

##### D. Primary Containment Isolation Valves

1. When Primary Containment Integrity is required, all isolation valves listed in Table 3.7.A and all reactor coolant system instrument line flow check valves shall be OPERABLE except as specified in 3.7.D.2.

##### D. Primary Containment Isolation Valves

1. The primary containment isolation valves surveillance shall be performed as follows:
  - a. At least once per operating cycle the OPERABLE isolation valves that are power operated and automatically initiated shall be tested for simulated automatic initiation and closure times.
  - b. At least once per quarter:
    - (1) All normally open power-operated isolation valves (except for the main steam line power-operated isolation valves) shall be fully closed and reopened.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.D. Primary Containment Isolation Valves

2. In the event any isolation valve specified in Table 3.7.A becomes INOPERABLE, reactor power operation may continue provided at least one valve in each line having an INOPERABLE valve, is OPERABLE and within 4 hours either:
  - a. The INOPERABLE valve is restored to OPERABLE status, or
  - b. Each affected line is isolated by use of at least one deactivated containment isolation valve secured in the isolated position.
3. If Specification 3.7.D.1 and 3.7.D.2 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the Cold Shutdown condition within 24 hours.

4.7.D. Primary Containment Isolation Valves

4.7.D.1.b (Cont'd)

- (2) With the reactor power less than 75%, trip main steam isolation valves individually and verify closure time.
- c. (Deleted)
- d. At least once per operating cycle, the operability of the reactor coolant system instrument line flow check valves shall be verified.
2. Whenever an isolation valve listed in Table 3.7.A is INOPERABLE, the position of at least one other valve in each line having an INOPERABLE valve shall be recorded daily.



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. 142  
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 May 15, 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.



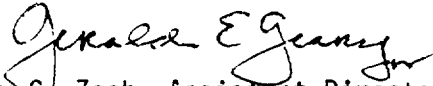
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-52 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 142, 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 its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Gary G. Zech, Assistant Director  
for Projects  
TVA Projects Division  
Office of Special Projects

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 1, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 142

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. Overleaf pages\* are provided to maintain document completeness.

REMOVE

3.7/4.7-17

3.7/4.7-18

INSERT

3.7/4.7-17\*

3.7/4.7-18

### 3.7/4.7 CONTAINMENT SYSTEMS

#### LIMITING CONDITIONS FOR OPERATION

#### SURVEILLANCE REQUIREMENTS

##### 3.7.C. Secondary Containment

4. If refueling zone secondary containment cannot be maintained the following conditions shall be met:
  - a. Handling of spent fuel and all operations over spent fuel pools and open reactor wells containing fuel shall be prohibited.
  - b. The standby gas treatment system suction to the refueling zone will be blocked except for a controlled leakage area sized to assure the achieving of a vacuum of at least 1/4-inch of water and not over 3 inches of water in all three reactor zones.

##### D. Primary Containment Isolation Valves

1. When Primary Containment Integrity is required, all isolation valves listed in Table 3.7.A and all reactor coolant system instrument line flow check valves shall be OPERABLE except as specified in 3.7.D.2.

##### D. Primary Containment Isolation Valves

1. The primary containment isolation valves surveillance shall be performed as follows:
  - a. At least once per operating cycle the OPERABLE isolation valves that are power operated and automatically initiated shall be tested for simulated automatic initiation and closure times.
  - b. At least once per quarter:
    - (1) All normally open power-operated isolation valves (except for the main steam line power-operated isolation valves) shall be fully closed and reopened.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.D. Primary Containment Isolation Valves

4.7.D. Primary Containment Isolation Valves

2. In the event any isolation valve specified in Table 3.7.A becomes INOPERABLE, reactor power operation may continue provided at least one valve in each line having an INOPERABLE valve, is OPERABLE and within 4 hours either:

- a. The INOPERABLE valve is restored to OPERABLE status, or
- b. Each affected line is isolated by use of at least one deactivated containment isolation valve secured in the isolated position.

3. If Specification 3.7.D.1 and 3.7.D.2 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the Cold Shutdown condition within 24 hours.

4.7.D.1.b (Cont'd)

(2) With the reactor power less than 75%, trip main steam isolation valves individually and verify closure time.

c. (Deleted)

d. At least once per operating cycle, the operability of the reactor coolant system instrument line flow check valves shall be verified.

2. Whenever an isolation valve listed in Table 3.7.A is INOPERABLE, the position of at least one other valve in each line having an INOPERABLE valve shall be recorded daily.



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. 117  
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 May 15, 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.

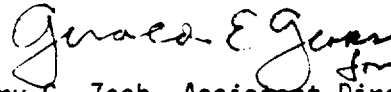
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-68 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 117, 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 its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Gary G. Zech, Assistant Director  
for Projects  
TVA Projects Division  
Office of Special Projects

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 1, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 117

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. Overleaf pages\* are provided to maintain document completeness.

REMOVE

3.7/4.7-17

3.7/4.7-18

INSERT

3.7/4.7-17\*

3.7/4.7-18

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.C. Secondary Containment

4. If refueling zone secondary containment cannot be maintained the following conditions shall be met:
  - a. Handling of spent fuel and all operations over spent fuel pools and open reactor wells containing fuel shall be prohibited.
  - b. The standby gas treatment system suction to the refueling zone will be blocked except for a controlled leakage area sized to assure the achieving of a vacuum of at least 1/4-inch of water and not over 3 inches of water in all three reactor zones.

D. Primary Containment Isolation Valves

1. When Primary Containment Integrity is required, all isolation valves listed in Table 3.7.A and all reactor coolant system instrument line flow check valves shall be OPERABLE except as specified in 3.7.D.2.

D. Primary Containment Isolation Valves

1. The primary containment isolation valves surveillance shall be performed as follows:
  - a. At least once per operating cycle the OPERABLE isolation valves that are power operated and automatically initiated shall be tested for simulated automatic initiation and closure times.
  - b. At least once per quarter:
    - (1) All normally open power-operated isolation valves (except for the main steam line power-operated isolation valves) shall be fully closed and reopened.



3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.D. Primary Containment Isolation Valves

2. In the event any isolation valve specified in Table 3.7.A becomes INOPERABLE, reactor power operation may continue provided at least one valve in each line having an INOPERABLE valve, is OPERABLE and within 4 hours either:
  - a. The INOPERABLE valve is restored to OPERABLE status, or
  - b. Each affected line is isolated by use of at least one deactivated containment isolation valve secured in the isolated position.
3. If Specification 3.7.D.1 and 3.7.D.2 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the Cold Shutdown condition within 24 hours.

SURVEILLANCE REQUIREMENTS

4.7.D. Primary Containment Isolation Valves

4.7.D.1.b (Cont'd)

- (2) With the reactor power less than 75%, trip main steam isolation valves individually and verify closure time.

c. (Deleted)

- d. At least once per operating cycle, the operability of the reactor coolant system instrument line flow check valves shall be verified.

2. Whenever an isolation valve listed in Table 3.7.A is INOPERABLE, the position of at least one other valve in each line having an INOPERABLE valve shall be recorded daily.



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

SAFETY EVALUATION BY THE OFFICE OF SPECIAL PROJECTS

SUPPORTING AMENDMENT NO. 146 TO FACILITY OPERATING LICENSE NO. DPR-33

AMENDMENT NO. 142 TO FACILITY OPERATING LICENSE NO. DPR-52

AMENDMENT NO. 117 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 May 15, 1987, Tennessee Valley Authority (the licensee) requested a change to the Browns Ferry Nuclear Plant, Unit 1, 2 and 3 Technical Specification to delete the requirement to perform a partial closure test of the main steam isolation valves (MSIVs) denoted in Surveillance Requirement 4.7.D.1.c. Deletion of the test requirement would allow the partial closure test to be performed quarterly, consistent with the requirements in Table 4.1.A for the Reactor Protection System scram on MSIV closure, rather than the twice per week test as currently specified.

2.0 EVALUATION

The Technical Specifications for Browns Ferry Nuclear Plant, Unit 1, 2 and 3 currently requires twice-weekly partial closure testing of the MSIVs. The licensee's request to decrease the frequency of the partial closure test (to quarterly) is offset by an increase in safety. The proposed change would decrease the probability of an inadvertent scram and plant transients. Since 1977, the licensee stated that the Browns Ferry Nuclear Power Plant has experienced five scrams attributable to equipment used during this test.

The increase in safety may be partially affected by the decrease in surveillance frequency for the MSIVs. However, this decrease is limited by other quarterly surveillance requirements which not only ensures that the mechanical portion of the MSIV is not stuck but also test the safety controls utilized in closing the MSIVs. The twice-weekly partial closure test only verified the mechanical portion of the valve and ensures that the MSIV is not stuck in the open position. A review of the Browns Ferry Main Steam System maintenance request indicates that failure of the mechanical portion of the valve has not been a dominant failure mode and MSIV closure has been demonstrated with a high degree of reliability. With deletion of the partial closure test requirement, the current Browns Ferry Technical Specifications still require that MSIVs be tested and closure time be verified on a quarterly basis which is in precise accordance with the staff's guidance as specified in the standard Technical Specifications.

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Additionally, the licensee's request would be consistent with the guidance of NUREG-0737, Item II.K.3.16, for reducing challenges to the relief valve by reducing MSIV testing.

Therefore, the staff finds this change to delete the requirement to perform a partial closure test of twice per week on the MSIVs acceptable.

### 3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve changes to requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 and changes to the surveillance requirements. We have determined that the amendment involves 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 made a final no significant hazards consideration finding with respect to these amendments. 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

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 nor to the health and safety of the public.

Principal Contributor: John Stang

Dated: March 1, 1988