April 30, 1984

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. 98 , 92 and 65 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 applications dated July 29, 1977 (TVA BFNP TS 89) as supplemented April 29, 1979 and July 20, 1979 for unit 3 and November 17, 1981 (TVA BFNP TS 169) for units 1 and 2.

The amendments change the Technical Specifications by referencing 10 CFR 50.55a(g) for inservice inspection requirements, rather than a specific description of a unique inservice inspection program. This change permits the Technical Specifications to remain consistent with updated inservice inspection programs required by the Regulations.

In a related matter, the Limiting Conditions for Operation for structural integrity contained in your Technical Specifications only address the primary coolant boundary. Therefore, we request that you review your Technical Specifications for any defects which might be identified in the course of inspection for the balance of ASME Code Class 1, Code Class 2 and Code Class 3 systems. Current staff guidance regarding this subject is contained in Standard Technical Specifications for BWRs (NUREG-0123). Please provide this requested change within 90 days of receipt of this letter.

A copy of the Safety Evaluation is also enclosed.

Sincerely,

Original signed by/

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

enclosures and cc:
See next page

Enclosures:
1. Amendment No. 98 to
   License No. DPR-33
2. Amendment No. 92 to
   License No. DPR-52
3. Amendment No. 65 to
   License No. DPR-68
4. Safety Evaluation

cc w/enclosures:
See next page

DISTRIBUTION
Docket File
NRC PDR
Local PDR
ORB#2 Reading
DEisenhut
SNorris
RClark
OELD
LJHarmon
ELJordan
JNGrace
TBarnhart (12)
WJones
DBrinkman
RHermann
ACRS (10)
OPA, CMiles
RDiggs
Gray File
Extra - 5

4/19/84
DL ORB#2
R. HERMANN

DL:ORB#2	DL:ORB#2	DL:ORB#2	OELD	DL:AD-OR
SNorris:ajs	RClark	DVassallo	E.J. GRAY	GLainas
04/10/84	04/19/84	04/23/84	04/26/84	04/20/84

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

cc:

H. S. Sanger, Jr., Esquire
General Counsel
Tennessee Valley Authority
400 Commerce Avenue
E 11B 330
Knoxville, Tennessee 37902

Mr. Ron Rogers
Tennessee Valley Authority
400 Chestnut Street, Tower II
Chattanooga, Tennessee 37401

Mr. Charles R. Christopher
Chairman, Limestone County Commission
Post Office Box 188
Athens, Alabama 35611

Ira L. Myers, M. D.
State Health Officer
State Department of Public Health
State Office Building
Montgomery, Alabama 36130

Mr. H. N. Culver
249A HBD
400 Commerce Avenue
Tennessee Valley Authority
Knoxville, Tennessee 37902

James P. O'Reilly
Regional Administrator
Region II Office
U. S. Nuclear Regulatory Commission
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

U. S. Environmental Protection
Agency
Region IV Office
Regional Radiation Representative
345 Courtland Street, N. W.
Atlanta, Georgia 30308

Resident Inspector
U. S. Nuclear Regulatory Commission
Route 2, Box 311
Athens, Alabama 35611

Mr. Donald L. Williams, Jr.
Tennessee Valley Authority
400 West Summit Hill Drive, W10B85
Knoxville, Tennessee 37902

George Jones
Tennessee Valley Authority
Post Office Box 2000
Decatur, Alabama 35602

Mr. Oliver Havens
U. S. Nuclear Regulatory Commission
Reactor Training Center
Osborne Office Center, Suite 200
Chattanooga, Tennessee 37411

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. 98
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 November 17, 1981, 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. 98, 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.

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: April 30, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 98

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.

182
183
184
209
210
211
212
213
214

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

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.6.F Jet Pump Flow Mismatch

1* 1. The reactor shall not be operated with one recirculation loop out of service for more than 24 hours. With the reactor operating, if one recirculation loop is out of service, the plant shall be placed in a hot shutdown condition within 24 hours unless the loop is sooner returned to service.

2. Following one pump operation, the discharge valve of the low speed pump may not be opened unless the speed of the faster pump is less than 50% of its rated speed.

3. Steady state operation with both recirculation pumps out of service for up to 12 hrs is permitted. During such interval restart of the recirculation pumps is permitted, provided the loop discharge temperature is within 75°F of the saturation temperature of the reactor vessel water as determined by dome pressure. The total elapsed time in natural circulation and one pump operation must be no greater than 24 hrs.

4.6.E Jet Pumps

b. The indicated value of core flow rate varies from the value derived from loop flow measurements by more than 10%.

c. The diffuser to lower plenum differential pressure reading on an individual jet pump varies from the mean of all jet pump differential pressures by more than 10%.

2. Whenever there is recirculation flow with the reactor in the Startup or Run Mode and one recirculation pump is operating with the equalizer valve closed, the diffuser to lower plenum differential pressure shall be checked daily and the differential pressure of an individual jet pump in a loop shall not vary from the mean of all jet pump differential pressures in that loop by more than 10%.

F. Recirculation Pump Operation

1. Recirculation pump speeds shall be checked and logged at least once per day.

2. No additional surveillance required.

3. Before starting either recirculation pump during steady state operation, check and log the loop discharge temperature and dome saturation temperature.

*Section 3.6.F.1 is amended to permit operation with one recirculation loop out of service from January 25, 1983 to midnight (CST) January 31, 1983 in accordance with the conditions of Section 3.6.F.4

Amendment No. 78, 83, 89, 98

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.6.G Structural Integrity	4.6.G Structural Integrity
1. The structural integrity of the primary system shall be maintained at the level required by the original acceptance standards throughout the life of the plant. The reactor shall be maintained in a cold shutdown condition until each indication of a defect has been investigated and evaluated.	1. Inservice inspection of ASME Code Class 1, Class 2, and Class 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by NRC pursuant to 10 CFR 50, Section 50.55a(g)(6)(i).
	2. Additional inspections shall be performed on certain circumferential pipe welds as listed to provide additional protection against pipe whip, which could damage auxiliary and control systems. Feedwater - GFW-9, KFW-13, GFW-12, GFW-26, KFW-31, GFW-29, KFW-39, GFW-15, KFW-38, and GFW-32 Main steam - GMS-6, KMS-24, GMS-32, KMS-104, GMS-15, and GMS-24 RHR - DSRHR-4, DSRHR-7, DSRHR-8A Core Spray - DSCS-12, DSCS-11, DSCS-5, and DSCS-4

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.6.G Structural Integrity	4.6.G Structural Integrity

Reactor
Cleanup - DSRWC-4, DSRWC-3
DSRWC-6, DSRWC-5

HPCI - THPCI-152
THPCI-153B
THPCI-153
THPCI-154

6. For Unit 1 an augmented inservice surveillance program shall be performed to monitor potential corrosive effects of chloride residue released during the March 22, 1975 fire. The augmented inservice surveillance program is specified as follows:

   a. Browns Ferry Mechanical Maintenance Instruction 53, dated September 22, 1975, paragraph 4, defines the liquid penetrant examinations required during the first, second, third and fourth refueling outages following the fire restoration.

   b. Browns Ferry Mechanical Maintenance Instruction 46, dated July 18, 1975, Appendix B, defines the liquid penetrant examinations required during the sixth refueling outage following the fire restoration.

PAGES
DELETED

209-214

Amendment No. 98

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. 92
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 November 17, 1981, 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. 92, 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.

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: April 30, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 92

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.

182
183
184
209
210
211
212
213
214

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

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENT
3.6.F Recirculation Pump Operation	4.6.E Jet Pumps
1. The reactor shall not be operated with one recirculation loop out of service for more than 24 hours. With the reactor operating, if one recirculation loop is out of service, the plant shall be placed in a hot shutdown condition within 24 hours unless the loop is sooner returned to service.	b. The indicated value of core flow rate varies from the value derived from loop flow measurements by more than 10%. c. The diffuser to lower plenum differential pressure reading on an individual jet pump varies from the mean of all jet pump differential pressures by more than 10%.
2. Following one pump operation, the discharge valve of the low speed pump may not be opened unless the speed of the faster pump is less than 50% of its rated speed.	2. Whenever there is recirculation flow with the reactor in the Startup or Run Mode and one recirculation pump is operating with the equalizer valve closed, the diffuser to lower plenum differential pressure shall be checked daily and the differential pressure of an individual jet pump in a loop shall not vary from the mean of all jet pump differential pressures in that loop by more than 10%.
3. Steady state operation with both recirculation pumps out of service for up to 12 hours is permitted. During such interval restart of the recirculation pumps is permitted, provided the loop discharge temperature is within 75°F of the saturation temperature of the reactor vessel water as determined by dome pressure. The total elapsed time in natural circulation and one pump operation must be no greater than 24 hours.	F. Recirculation Pump Operation 1. Recirculation pump speeds shall be checked and logged at least once per day. 2. No additional surveillance required. 3. Before starting either recirculation pump during steady state operation, check and log the loop discharge temperature and dome saturation temperature.

3.6.G Structural Integrity

1. The structural integrity of the primary system shall be maintained at the level required by the original acceptance standards throughout the life of the plant. The reactor shall be maintained in a cold shutdown condition until each indication of a defect has been investigated and evaluated.

4.6.G Structural Integrity

1. Inservice inspection of ASME Code Class 1, Class 2, and Class 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by NRC pursuant to 10 CFR 50, Section 50.55a(g)(6)(i).

2. Additional inspections shall be performed on certain circumferential pipe welds as listed to provide additional protection against pipe whip, which could damage auxiliary and control systems.

Feedwater	-	GFW-9, KFW-13 GFW-12, GFW-26, KFW-31, GFW-29, KFW-39, GFW-15, KFW-38, and GFW-32
Main steam	-	GMS-6, KMS-24, GMS-32, KMS-104 GMS-15, and GMS-24
RHR	-	DSRHR-4, DSRHR-7, DSRHR-6
Core Spray	-	DSCS-12, DSCS-11, DSCS-5, and DSCS-4

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.6.G Structural Integrity	4.6.G Structural Integrity
	Reactor Cleanup - DSRWC-4, DSRWC-3, DSRWC-6, and DSRWC-5
	HPCI - THPCI-70 THPCI-70A THPCI-71, and THPCI-72

PAGES
DELETED

209-214

Amendment No. 92

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. 65
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 July 29, 1977, as supplemented April 24, and July 20, 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 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. 65, 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.

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: April 30, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 65

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.

196
197
203
204
205
206
207
208

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

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.6 PRIMARY SYSTEM BOUNDARY	4.6 PRIMARY SYSTEM BOUNDARY
G. Structural Integrity	G. Structural Integrity
1. The structural integrity of the primary system shall be maintained at the level required by the original acceptance standards throughout the life of the plant. The reactor shall be maintained in a cold shutdown condition until each indication of a gross defect, which could adversely affect the structural integrity of the reactor coolant pressure boundary, has been investigated and evaluated.	1. Inservice inspection of ASME Code Class 1, Class 2, and Class 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by NRC pursuant to 10 CFR 50, Section 50.55a(g)(6)(i).
	2. Additional inspections shall be performed on certain circumferential pipe welds as listed to provide additional protection against pipe whip, which could damage auxiliary and control systems. Feedwater- GFW-9, KFW-13, GFW-12, GFW-26, KFW-31, GFW-29, KFW-39, GFW-15, KFW-38, and GFW-3.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.6 PRIMARY SYSTEM BOUNDARY	4.6 PRIMARY SYSTEM BOUNDARY

Main steam -GMS-6, KMS-24, GMS-32, KMS-104, GMS-15, and GMS-24

RHR -DSRHR-6, DSRHR-7, and DSRHR-4

Core Spray -DSCS-12, DSCS-11, DSCS-5, and DSCS-4

Reactor Cleanup -DSRWC-4, DSRWC-3, DSRWC-6, and DSRWC-5

HPCI -THPCI-70 THPCI-70A THPCI-71, and THPCI-72

REFERENCE

1. Plant Safety Analysis (BFNP FSAR subsection 4.12)

PAGES
DELETED

203-208

Amendment No. 65

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 98 TO FACILITY OPERATING LICENSE NO. DPR-33

AMENDMENT NO. 92 TO FACILITY OPERATING LICENSE NO. DPR-52

AMENDMENT NO. 65 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 letters dated July 29, 1977 (TVA BFNP TS 89) as supplemented April 24, 1979 and July 20, 1979 for unit 3 and November 17, 1981 (TVA BFNP TS 169) for units 1 and 2, the Tennessee Valley Authority (the licensee or TVA) requested amendments to Facility Operating License Nos. DPR-33, DPR-52 and DPR-68 for the Browns Ferry Nuclear Plant. The applications by TVA were in response to a request by the NRC staff on September 15, 1976 to apply for amendments to the Technical Specifications to resolve any conflicts between the inservice inspection requirements contained in the facility Technical Specifications and those required by 10 CFR 50.55a. The requirement for this clarification is contained in 10 CFR 50.55a(g)(5)(ii).

The proposed amendments would change the Technical Specifications to implement the requirements of 10 CFR 50.55a(g) pertaining to inservice inspection to provide assurance that the structural integrity of systems and components important to safety are maintained. The proposed amendments would add surveillance requirements to provide for inservice inspection of safety-related components, in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the NRC.

2.0 Evaluation

The regulations for inservice inspection (10 CFR 50.55a(g)) were changed on February 27, 1976 to require that facility inservice inspection (ISI) programs be periodically updated to later editions of the ASME, Boiler and Pressure Vessel Code, Section XI. In order to eliminate conflicts between ISI requirements in the Technical Specifications and those specified by Regulation, 10 CFR 50.55a(g)(5)(ii) requires that Technical Specifications be changed to reference the Regulations (10 CFR 50.55a) rather than contain details of a specific ISI program. The staff provided guidance for such Technical Specification changes in an enclosure to a letter dated September 15, 1976. Similar language is contained in current revisions of BWR Standard Technical Specifications (NUREG-0123).

The staff has reviewed the licensee's submittals dated July 29, 1977 as supplemented April 24, 1979 and July 20, 1979 for unit 3, and November 17, 1981 for units 1 and 2.

The proposed amendments (including the changes to unit 3 discussed below) are identical to the guidance provided by the staff in its September 15, 1976 letter, as well as the Section 16.0 of the Standard Review Plan. Therefore, we find the proposed changes acceptable.

To achieve consistency with its submittal on units 1 and 2 and the staff guidance stated above, the licensee agreed in a telecon of March 22, 1984 to a change to page 196 of the unit 3 submittal. This change to the unit 3 submittal did not affect the Federal Register notice of this item issued on November 22, 1983, because the change to the submittal brought the amendment request in exact conformance with the description of the action in the Federal Register notice.

3.0 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 CFR §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.

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 Contributors: Robert A. Hermann

Dated: April 30, 1984