

August 22, 1989

Docket No. 5C-260

Mr. Oliver D. Kingsley, Jr.  
Senior Vice President, Nuclear Power  
Tennessee Valley Authority  
6N 38A Lookout Place  
1101 Market Street  
Chattanooga, Tennessee 37402-2801

Dear Mr. Kingsley:

SUBJECT: ISSUANCE OF AMENDMENT - BROWNS FERRY NUCLEAR PLANT, UNIT 2  
(TAC 72254) (TS 266)

The Commission has issued the enclosed Amendment No. 171, to Facility Operating License No. DPR-52 for the Browns Ferry Nuclear Plant, Unit 2. This amendment is in response to your application dated February 17, 1989 as supplemented by information provided in your submittal of June 20, 1989.

This amendment corrects typographical errors and provides for consistency between Technical Specification (TS) Table 3.2.F, notes to Table 3.2.F, Table 4.2.F and Page 6.0-29. In addition, it removes TS requirements from the Iodine and particulate gaseous effluent monitors for the accident condition.

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

Suzanne Black, Assistant Director  
for Projects  
TVA Projects Division  
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 171 to License No. DPR-52
- 2. Safety Evaluation

cc w/enclosures:  
See next page

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Mr. Oliver D. Kingsley, Jr.

- 2 -

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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. 171  
License No. DPR-52

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Tennessee Valley Authority (the licensee) dated February 17 and June 20, 1989, 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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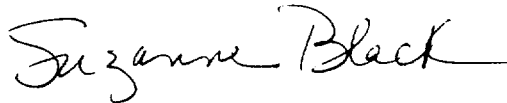
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-52 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 171, 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



Suzanne Black, Assistant Director  
for Projects  
TVA Projects Division  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: August 22, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 171

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 for document integrity.

<u>REMOVE</u>	<u>INSERT</u>
3.2/4.2-31	3.2/4.2-31*
3.2/4.2-32	3.2/4.2-32
3.2/4.2-33	3.2/4.2-33
-	3.2/4.2-33a
3.2/4.2-54	3.2/4.2-54 *
3.2/4.2-55	3.2/4.2-55
6.0-27	6.0-27*
6.0-28	6.0-28*
6.0-29	6.0-29
6.0-30	6.0-30*

TABLE 3.2.F  
Surveillance Instrumentation

<u>Minimum # of Operable Instrument Channels</u>	<u>Instrument #</u>	<u>Instrument</u>	<u>Type Indication and Range</u>	<u>Notes</u>
2	LI-3-58A LI-3-58B	Reactor Water Level	Indicator - 155" to +60"	(1) (2) (3)
2	PI-3-74A PI-3-74B	Reactor Pressure	Indicator 0-1200 psig	(1) (2) (3)
2	XR-64-50 PI-64-67B TI-64-52AB	Drywell Pressure	Recorder 0-80 psia Indicator 0-80 psia	(1) (2) (3)
2	XR-64-50	Drywell Temperature	Recorder, Indicator 0-400°F	(1) (2) (3)
1	XR-64-52	Suppression Chamber Air Temperature	Recorder 0-400°F	(1) (2) (3)
1	N/A	Control Rod Position	6V Indicating Lights )	
1	N/A	Neutron Monitoring	SRM, IRM, LPRM ) 0 to 100% power )	(1) (2) (3) (4)
1	PS-64-67B	Drywell Pressure	Alarm at 35 psig )	
1	TS-64-52A & PIS-64-58A & IS-64-67A	Drywell Temperature and Pressure and Timer	Alarm if temp. > 281°F and pressure > 2.5 psig after 30 minute delay )	(1) (2) (3) (4)
1	LI-84-2A	CAD Tank "A" Level	Indicator 0 to 100%	(1)
1	LI-84-13A	CAD Tank "B" Level	Indicator 0 to 100%	(1)

BFN  
Unit 2

3.2/4.2-31

FEB 05 1987

TABLE 3.2.F (cont'd)  
Surveillance Instrumentation

<u>Minimum # of Operable Instrument Channels</u>	<u>Instrument #</u>	<u>Instrument</u>	<u>Type Indication and Range</u>	<u>Notes</u>
2	H <sub>2</sub> M - 76 - 94 H <sub>2</sub> M - 76 - 104	Drywell and Torus Hydrogen Concentration	0.1 - 20%	(1)
2	PdI-64-137 PdI-64-138	Drywell to Suppression Chamber Differential Pressure	Indicator 0 to 2 psid	(1) (2) (3)
1/Valve		Relief Valve Tailpipe Thermocouple Temperature or Acoustic Monitor on Relief Valve Tailpipe		(5)
1	RR-90-272CD RR-90-273CD	High Range Primary Containment Radiation Recorders	Recorder 1-10 <sup>7</sup> R/Hr	(7)(8)
2	LI-64-159A XR-64-159	Suppression Chamber Water Level-Wide Range	Indicator, Recorder 0-240"	(1) (2) (3)
2	PI-64-160A XR-64-159	Drywell Pressure Wide Range	Indicator, Recorder) 0-300 psig )	(1) (2) (3)
2	TI-64-161 TR-64-161 TI-64-162 TR-64-162	Suppression Pool Bulk Temperature	Indicator, Recorder) 30° - 230° F )	(1) (2) (3) (4) (6)
1	RM-90-306 RR-90-360	Wide Range Gaseous Effluent Radiation Monitor and recorder	Monitor and recorder (Noble Gas 10 <sup>-7</sup> - 10 <sup>+5</sup> Ci/cc)	(7)(8)(9)

BFN  
Unit 2

3.2/4.2-32

Amendment No. 171

NOTES FOR TABLE 3.2.F

- (1) From and after the date that one of these parameters is reduced to one indication, continued operation is permissible during the succeeding 30 days unless such instrumentation is sooner made OPERABLE.
- (2) From and after the date that one of these parameters is not indicated in the control room, continued operation is permissible during the succeeding seven days unless such instrumentation is sooner made OPERABLE.
- (3) If the requirements of notes (1) and (2) cannot be met, and if one of the indications cannot be restored in (6) hours, an orderly shutdown shall be initiated and the reactor shall be in a COLD SHUTDOWN CONDITION within 24 hours.
- (4) These surveillance instruments are considered to be redundant to each other.
- (5) From and after the date that both the acoustic monitor and the temperature indication on any one valve fails to indicate in the control room, continued operation is permissible during the succeeding 30 days, unless one of the two monitoring channels is sooner made OPERABLE. If both the primary and secondary indication on any SRV tailpipe is inoperable, the torus temperature will be monitored at least once per shift to observe any unexplained temperature increase which might be indicative of an open SRV.
- (6) A channel consists of eight sensors, one from each alternating torus bay. Seven sensors must be OPERABLE for the channel to be OPERABLE.
- (7) When one of these instruments is inoperable for more than seven days, in lieu of any other report required by Specification 6.9.1.4, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next seven days outlining the action taken, the cause of inoperability, and the plans and schedule for restoring the system to OPERABLE status.
- (8) With the plant in REACTOR POWER OPERATION, STARTUP CONDITION, HOT STANDBY CONDITION OR HOT SHUTDOWN CONDITION and with the number of OPERABLE channels less than the required OPERABLE channels, either restore the inoperable channel(s) to OPERABLE status within 72 hours, or initiate the preplanned alternate method of monitoring the appropriate parameter.
- (9) Noble Gas only



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TABLE 4.2.F  
 MINIMUM TEST AND CALIBRATION FREQUENCY FOR SURVEILLANCE INSTRUMENTATION

<u>Instrument Channel</u>	<u>Calibration Frequency</u>	<u>Instrument Check</u>
1) Reactor Water Level (LI-3-58A&B)	Once/6 months	Each Shift
2) Reactor Pressure (PI-3-74A&B)	Once/12 months	Each Shift
3) Drywell Pressure (PI-64-67B) and XR-64-50	Once/6 months	Each Shift
4) Drywell Temperature (TI-64-52AB) and XR-64-50	Once/6 months	Each Shift
5) Suppression Chamber Air Temperature (XR-64-52)	Once/6 months	Each Shift
8) Control Rod Position	N/A	Each Shift
9) Neutron Monitoring	(2)	Each Shift
10) Drywell Pressure (PS-64-67B)	Once/6 months	N/A
11) Drywell Pressure (PIS-64-58A)	Once/6 months	N/A
12) Drywell Temperature (TS-64-52A)	Once/6 months	N/A
13) Timer (IS-64-67A)	Once/6 months	N/A
14) CAD Tank Level	Once/6 months	Once/day
15) Containment Atmosphere Monitors	Once/6 months	Once/day

BFN  
 Unit 2

3.2/4.2-54

FEB 05 1987

TABLE 4.2.F (Continued)  
MINIMUM TEST AND CALIBRATION FREQUENCY FOR SURVEILLANCE INSTRUMENTATION

<u>Instrument Channel</u>	<u>Calibration Frequency</u>	<u>Instrument Check</u>
16) Drywell to Suppression Chamber Differential Pressure	Once/6 months	Each Shift
17) Relief Valve Tailpipe Thermocouple Temperature	N/A	Once/month (24)
18) Acoustic Monitor on Relief Valve Tailpipe	Once/cycle (25)	Once/month (26)
19) High Range Primary Containment Radiation Monitors (RR-90-272CD) (RR-90-273CD)	Once/18 Months (30)	Once/month
20) Suppression Chamber Water Level-Wide Range (LI-64-159A) (XR-64-159)	Once/18 Months	Once/shift
21) Drywell Pressure - Wide Range (PI-64-160A) (XR-64-159)	Once/18 Months	Once/shift
22) Suppression Pool Bulk Temperature (TI-64-161) (TR-64-161) (TI-64-162) (TR-64-162)	Once/18 Months	Once/shift
23) Wide Range Gaseous Effluent Radiation Monitor and recorder (RM-90-306 and RR-90-360)	Once/18 Months	Once/shift

3.2/4.2-55

6.9.2 SPECIAL REPORTS

Reports on the following areas shall be submitted in writing to the Director of Regional Office of Inspection and Enforcement:

- |   |          |   |
|---|----------|---|
| 1. Fatigue Usage  | 6.10.1.q | Annual<br>Operating<br>Report   |
| 2. Relief Valve Tailpipe  | 3.2.F    | Within 30 days<br>after inoper-<br>ability of<br>thermocouple<br>and acoustic<br>monitor on<br>one valve. |
| 3. Seismic Instrumentation<br>Inoperability   | 3.2.J.3  | Within 10 days<br>after 30 days of<br>inoperability.  |
| 4. Meteorological Monitoring<br>Instrumentation<br>Inoperability  | 3.2.I.2  | Within 10 days<br>after 7 days of<br>inoperability.   |
| 5. Primary Containment<br>Integrated Leak Rate<br>Testing   | 4.7.A.2  | Within 90 days<br>of completion of<br>each test.  |
| 6. Data shall be retrieved from all seismic instruments<br>actuated during a seismic event and analyzed to determine<br>the magnitude of the vibratory ground motion. A Special |          |   |

Report shall be submitted within 10 days after the event describing the magnitude, frequency spectrum, and resultant effect upon plant features important to safety.

7. Diesel Generator Reliability Improvement Program Report shall be submitted within 30 days of meeting failure criteria in Table 4.9.A. As a minimum, the reliability Improvement Program report for NRC audit shall include:
  - a. A summary of all tests (valid and invalid) that occurred within the time period over which the last 20/100 valid tests were performed.
  - b. Analysis of failures and determination of root causes of failures.
  - c. Evaluation of each of the recommendations of NUREG/CR-0660, "Enhancement of Onsite Emergency Diesel Generator Reliability in Operating Reactors," with respect to their application to the plant.
  - d. Identification of all actions taken or to be taken to (1) Correct the root causes of failures defined in b above and (2) Achieve a general improvement of diesel generator reliability.
  - e. A supplemental report shall be prepared for an NRC audit within 30 days after each subsequent failure during a valid demand, for so long as the affected diesel generator unit continues to violate the criteria (3/20 or 6/100) for the reliability improvement program remedial action. The supplemental report need only update the failure/demand history for the affected diesel generator unit since the last report for that diesel generator. The supplemental report shall also present an analysis of the failure(s) with a root cause determination, if possible, and shall delineate any further procedural, hardware or operational changes to be incorporated into the site diesel generator improvement program and the schedule for implementation of those changes.

8. Secondary Containment Leak Rate Testing*	4.7.C.	Within 90 days of completion of each test.
9. High-Range Primary Containment Radiation Monitors	3.2.F	Within 7 days after 7 days of inoperability.
10. Wide-Range Gaseous Effluent Radiation Monitor and recorder	3.2.F	Within 7 days after 7 days of inoperability.

\*Each integrated leak rate test of the secondary containment shall be the subject of a summary technical report. This report should include data on the wind speed, wind direction, outside and inside temperatures during the test, concurrent reactor building pressure, and emergency ventilation flow rate. The report shall also include analyses and interpretations of those data which demonstrate compliance with the specified leak rate limits.

#### 6.10 STATION OPERATING RECORDS AND RETENTION

6.10.1 Records and/or logs shall be kept in a manner convenient for review as indicated below:

- a. All normal plant operation including such items as power level, fuel exposure, and shutdowns
- b. Principal maintenance activities
- c. Reportable Events
- d. Checks, inspections, tests, and calibrations of components and systems, including such diverse items as source leakage
- e. Reviews of changes made to the procedures or equipment or reviews of tests and experiments to comply with 10 CFR 50.59
- f. Radioactive shipments
- g. Test results in units of microcuries for leak tests performed pursuant to Specification 3.8.D

- h. Record of annual physical inventory verifying accountability of sources on record
- i. Gaseous and liquid radioactive waste released to the environs
- j. Offsite environmental monitoring surveys
- k. Fuel inventories and transfers
- l. Plant radiation and contamination surveys
- m. Radiation exposures for all plant personnel
- n. Updated, corrected, and as-built drawings of the plant
- o. Reactor coolant system inservice inspection
- p. Minutes of meetings of the NSRB
- q. Design fatigue usage evaluation

Monitoring and recording requirements below will be met for various portions of the reactor coolant pressure boundary (RCPB) for which detailed fatigue usage evaluation per the ASME Boiler and Pressure Vessel Code Section III was performed for the conditions defined in the design specification. In this plant, the applicable codes require fatigue usage evaluation for the reactor pressure vessel only. The locations to be monitored shall be:

- 1. The feedwater nozzles
- 2. The shell at or near the waterline
- 3. The flange studs



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

ENCLOSURE 2

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NO. 171 TO FACILITY OPERATING LICENSE NO. DPR-52

TENNESSEE VALLEY AUTHORITY  
BROWNS FERRY NUCLEAR PLANT, UNIT 2  
DOCKET NO. 50-260

1.0 INTRODUCTION

The proposed amendment to the Browns Ferry Nuclear Plant (BFN) Technical Specifications (TS), Unit 2 would correct the following errors:

- (1) Table 3.2.F, Instrument Number RR-90-322A (Page 3.2/4.2-32) - Change the instrument number, correct typographical error in the Type Indication and Range Column, delete the Iodine and Particulates indication, and add a footnote 9 to the same instrument.
- (2) Notes to Table 3.2.F (Page 3.2/4.2-33) - Correct typographical errors in footnote 7 and add footnote 9 to the table.
- (3) Table 4.2.F, Item 23 (Page 3.2/4.2-55) - Change instrument number of RR-90-322-A and its description from "high-range" to "wide-range."
- (4) Item 6.9.2.10 (Page 6.0-29) - Correct the word "high-range" to "wide-range."

2.0 EVALUATION

The amendment does not increase the probability or consequence of any accident previously evaluated. The amendment corrects typographical errors and provides for consistency between TS Table 3.2.F, notes to Table 3.2.F and Page 6.0-29. These corrections are administrative and acceptable.

The changing of the instrument designation from RR-90-322A to RM-90-306 and RR-90-360 involves removal of the portion of RR-90-322A that is applicable to iodine and particulate monitors from TS requirements. Essentially, the monitor for noble gases (RM-90-306) and its associated remote readout, alarm and recorder RR 90-360 will continue to be covered by TS, but the iodine and particulate portion of RR-90-322A will no longer be covered. This change is in accordance with the requirements of NUREG-0737, Section II.F.1, Attachment 1 which require continuous monitoring and recording of noble gas concentrations and of Section II.F.2, Attachment 2 which requires continuous sampling of plant gaseous effluent for only post-accident release of radioactive iodines and particulates.



The qualification of the noble gas monitor with the guidelines of Regulatory Guide (RG) 1.97 as applied to Emergency Response facilities was reviewed by the staff and the safety evaluation was published on June 23, 1988 which found the qualification of the installed noble gas monitor adequate.

The iodines and particulates are measured by onsite laboratory analysis of particulate and carbon filters installed in the continuous flow effluent sample line. These analyses are conducted by trained technicians using approved procedures.

This amendment to the BFN TS is in compliance with the requirements of NUREG-0737, Items II.F.1 and II.F.2 and RG 1.97. This amendment does not involve a significant reduction in the margin of safety. Deletion of the iodine monitors and particulate monitors from TS Table 3.2.F will not decrease the margin of safety since BFN will continue to sample and analyze the subject filters to determine any quantities of particulates and iodines that may be released. The onsite laboratory equipment, used by trained technicians in accordance with approved procedures, ensures that the analysis can be performed to support the needs of the plant and offsite personnel in the event of an accident.

### 3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes to the surveillance requirements. The staff has 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 previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendment meets 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 the amendment.

### 4.0 CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration which was published in the Federal Register (54 FR 29412) on July 12, 1989 and consulted with the State of Alabama. No public comments were received and the State of Alabama did not have any comments.

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such

activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendments will not be inimical to the common defense and security nor to the health and safety of the public.

Principal Contributor: T. Daniels

Dated: August 22, 1989