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UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-259

BROWNS FERRY NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 231 License No. DPR-33

- The Nuclear Regulatory Commission (the Commission) has found that:
 - The application for amendment by Tennessee Valley Authority (the Α. licensee) dated May 3, 1996, 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:
 - The facility will operate in conformity with the application, the Β. 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
 - The issuance of this amendment is in accordance with 10 CFR Part 51 Ε. of the Commission's regulations and all applicable requirements have been satisfied.

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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) <u>Technical Specifications</u>

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 231, 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 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Frederick J. Hebdyn, Director Project Directorate II-3 Division of Reactor Projects - I/II Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: September 18, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 231

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 included to maintain document completeness.

REMOVE INSERT iii iv iv iv * 1.0-11 1.0-11 1.0-12 3.2/4.2-9 3.2/4.2-10 3.2/4.2-10

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٠	•	C. Coolant Leakage	3.6/4.6-9
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		A. Primary Containment	3.7/4.7-1
		B. Standby Gas Treatment System	3.7/4.7-13
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٠	3.8/4.8	Radioactive Materials	3.8/4.8-1
		A. Liquid Effluents	3.8/4.8-1
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•		C. (Deleted)	3.8/4.8-4
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	3.10	/4.10	Core Alterations	3.10/4.10-1
4	•	Α.	Refueling Interlocks	3.10/4.10-1
۰,		в.	Core Monitoring.	3.10/4.10-5
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1.0 <u>DEFINITIONS</u> (Cont'd)

- GG. <u>Site Boundary</u> Shall be that line beyond which the land is not owned, leased, or otherwise controlled by TVA.
- HH. Unrestricted Area Any area at or beyond the SITE BOUNDARY to which access is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials or any area within the SITE BOUNDARY used for industrial, commercial, institutional, or recreational purposes.
- II. Dose Equivalent I-131 The DOSE EQUIVALENT I-131 shall be the concentration of I-131 (in μ Ci/gm) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factor used for this calculation shall be those listed in Table III of TID-14844 "Calculation of Distance Factors for Power and Test Reactor Sites".
- JJ. <u>Gaseous Waste Treatment System</u> The charcoal adsorber vessels installed on the discharge of the steam jet air ejector to provide delay to a unit's offgas activity prior to release.
- KK. <u>Members of the Public</u> Any individual except when that individual receives an occupational dose (as defined in 10 CFR 20).
- LL. <u>Surveillance</u> Surveillance Requirements shall be met during the OPERATIONAL CONDITIONS or other conditions specified for individual limiting conditions for operation unless otherwise stated in an individual Surveillance Requirements. Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval. It is not intended that this (extension) provision be used repeatedly as a convenience to extend surveillance intervals beyond that specified for surveillances that are not performed during refueling outages.

Performance of a Surveillance Requirement within the specified time interval shall constitute compliance and OPERABILITY requirements for a limiting condition for operation and associated action statements unless otherwise required by these specifications. Surveillance Requirements do not have to be performed on inoperable equipment.

If it is discovered that a surveillance was not performed within its specified frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified frequency, whichever is less. This delay period is permitted to allow performance of the surveillance.

BFN Unit 1 1.0-11

1.0 DEFINITIONS (Cont'd)

If the surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable condition(s) must be entered.

When the surveillance is performed within the delay period and the surveillance is not met, the LCO must immediately be declared not met, and the applicable condition(s) must be entered.

- MM. Surveillance Requirements for ASME Section XI Pump and Valve Program -Surveillance Requirements for Inservice Testing of ASME Code Class 1, 2, and 3 components shall be applicable as follows:
 - Inservice testing of ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55(g)(6)(i).
 - 2. Surveillance intervals specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for the inservice testing activities required by the ASME Boiler and Pressure Vessel Code and applicable Addenda shall be applicable as follows in these technical specifications:

ASME Boiler and Pressure Vessel	Required frequencies
Code and applicable Addenda	for performing inservice
terminology for inservice	testing activities
testing activities	

Weekly	At	least	once	per	
Monthly	At	least	once	per	
Quarterly or every 3 months	At	least	once	per	
Semiannually or every 6 months	, At	least	once	per	
Every 9 months	At	least	once	per	
Yearly or annually	At	least	once	per	

- 3. The provisions of Specification 1.0.LL are applicable to the above required frequencies for performing inservice testing activities.
- 4. Performance of the above inservice testing activities shall be in addition to other specified surveillance requirements.
- 5. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any technical specification.

6. The inservice inspection program for piping identified in NRC Generic Letter 88-01 shall be performed in accordance with the staff positions on schedule, methods, personnel, and sample expansion included in this generic letter.

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AMENDMENT NO. 230

7 days 31 days 92 days 184 days 276 days 366 days

BFN Unit 1

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BFN Unit l	Minimum No. Instrument Channels Operable <u>per Trip Sys(1)(11)</u>	Function	Trip Level Setting	Action(1)	Remarks
	1(15)	Instrument Channel – Reactor Building Ventilation High Radiation – Refueling Zone	≤ 100 mr/hr or downscale	F	 l upscale channel or 2 downscale channels will a. Initiate SGTS b. Isolate refueling floor c. Close atmosphere control system.
	2(7) (8)	Instrument Channel SGTS Flow - Train A R. H. Heaters	<u>></u> 2000 cfm and <u><</u> 4000 cfm	H and (A or F)	Below 2000 cfm airflow R.H. heaters shall be shut off.
	2(7) (8)	Instrument Channel SGTS Flow - Train B R. H. Heaters	<u>></u> 2000 cfm and <u><</u> 4000 cfm ,	H and (A or F)	Below 2000 cfm airflow R.H. heaters shall be shut off.
3.2/4.2-9	2(7) (8)	Instrument Channel SGTS Flow - Train C R. H. Heaters	<u>></u> 2000 cfm and <u><</u> 4000 cfm	H and (A or F)	Below 2000 cfm airflow R.H. heaters shall be shut off.
2-9	· 1 · · ·	Reactor Building Isolation Timer (refueling floor)	0 <u><</u> t <u><</u> 2 secs.	H or F	 Below trip setting prevents spurious trips and system perturbations from initiating isolation.
	1	Reactor Building Isolation Timer (reactor zone)		G or A or H	 Below trip setting prevents spurious trips and system perturbations from initiating isolation.
AMENDMENT NO. 231	2(10)	Group 1 (Initiating) Logic [∀]	N/A	Α	 Group 1: A Group 1 isolation is actuated by any of the following conditions: a. Reactor Vessel Low Low Water Level b. Deleted c. Main Steamline High Flow d. Main Steamline Space High Temperature e. Main Steamline Low Pressure

TABLE 3.2.A (Continued) PRIMARY CONTAINMENT AND REACTOR BUILDING ISOLATION INSTRUMENTATION

BFN Unit l	Minimum No. Instrument Channels Operable <u>per Trip Sys(1)(11)</u>	Function	Trip Level Setting	Action_(1)	•	Remarks
	1 .	Group 1 (Actuation) Logic	N/A	B	1.	 Group 1: A Group 1 isolation is actuated by any of the following conditions: a. Reactor Vessel Low Low Water Level b. Deleted c. Main Steamline High Flow d. Main Steamline Space High Temperature e. Main Steamline Low Pressure
	2	Group 2 (Initiating) Logic	N/A [*]	A or (B and E)	۱.	Group 2: A Group 2 isolation is actuated by any of the following conditions: a. Reactor Vessel Low Water Level b. High Drywell Pressure
ယ •	1	Group 2 (RHR Isolation- Actuation) Logic	N/A	D		x .
.2/4.2-10	1	Group 8 (TIP-Actuation) Logic	N/A	J		*
	١	Group 2 (Drywell Sump Drains-Actuation) Logic	N/A	К		、
	1	Group 2 (Reactor Building & Refueling Floor, and Drywell Vent and Purge- Actuation) Logic	N/A	F and G	1.	Part of Group 6 Logic
	2	Group 3 (Initiating) Logic	N/A	c	۱.	Group 3: A Group 3 isolation is actuated by any of the following conditions:

TABLE 3.2.A (Continued) PRIMARY CONTAINMENT AND REACTOR BUILDING ISOLATION INSTRUMENTATION

a. Reactor Vessel Low Water Level
b. Reactor Water Cleanup System High Temperature
c. Reactor Water Cleanup System High Drain Temperature

AMENDMENT NO. 231

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TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-260

BROWNS FERRY NUCLEAR PLANT, UNIT 2.

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 246 License No. DPR-52

The Nuclear Regulatory Commission (the Commission) has found that:

- A. The application for amendment by Tennessee Valley Authority (the licensee) dated May 3, 1996, 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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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) <u>Technical Specifications</u>

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 246, 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 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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Frederick J. Hebden, Director Project Directorate II-3 Division of Reactor Projects - I/II Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: September 18, 1996

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ATTACHMENT TO LICENSE AMENDMENT NO. 246

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 included to maintain document completeness.

REMOVE	INSERT
iii	iii
iv	iv,*
1.0-9	' 1.0-9
1.0-10	1.0-10 *
1.0-11	1.0-11
1.0-12	1.0-12 *
3.2/4.2-9	3.2/4.2-9
3.2/4.2-10	3.2/4.2-10
3.2/4.2-14	3.2/4.2-14
3.2/4.2-15	3.2/4.2-15 *
3.9/4.9-5	3.9/4.9-5 *
3.9/4.9-6	3.9/4.9-6
3.9/4.9-10a	
3.9/4.9-10b	
3.9/4.9-11	3.9/4.9-11
3.9/4.9-12	3.9/4.9-12 *

<u>Section</u>		<u>Page No.</u>
۵	C. Coolant Leakage	3.6/4.6-9
•	D. Relief Valves	3.6/4.6-10
- 4	E. Jet Pumps	3.6/4.6-11
	F. Recirculation Pump Operation	3.6/4.6-12
1	G. Structural Integrity	3.6/4.6-13
	H. Snubbers	3.6/4.6-15
3.7/4.7	Containment Systems	3.7/4.7-1
	A. Primary Containment.	3.7/4.7-1
	B. Standby Gas Treatment System	3.7/4.7-13
	C. Secondary Containment	3.7/4.7-16
	D. Primary Containment Isolation Valves	3.7/4.7-17
	E. Control Room Emergency Ventilation :	3.7/4.7-19 •
	F. Primary Containment Purge System	3.7/4.7-21
*	G. Containment Atmosphere Dilution System (CAD) .	3.7/4.7-22
	H. Containment Atmosphere Monitoring (CAM) System H ₂ Analyzer	3.7/4.7–24
3.8/4.8	Radioactive Materials	3.8/4.8-1
	A. Liquid Effluents	3.8/4.8-1
	B. Airborne Effluents	3.8/4.8-3
	C. (Deleted)	3.8/4.8-4
	D. (Deleted)	3.8/4.8-4
	E. Miscellaneous Radioactive Materials Sources	3.8/4.8-5
I	F. (Deleted)	3.8/4.8-6
3.9/4.9	Auxiliary Electrical System	3.9/4.9-1
	A. Auxiliary Electrical Equipment	3.9/4.9-1
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AMENDMENT NO. 246

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•	Section		Page No.
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•	•	D. Diesel Generators Required for Units 1, 2, and 3 Shared Systems	3.9/4.9-15a
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		A. Refueling Interlocks	3.10/4.10-1
	•	B. Core Monitoring	3.10/4.10-5
	4	C. Spent Fuel Pool Water	3.10/4.10-7
		D. Reactor Building Crane	3.10/4.10-8
	ı	E. Spent Fuel Cask	3.10/4.10-9
	н " -	F. Spent Fuel Cask Handling-Refueling Floor	3.10/4.10-10
•	3.11/4.11	Deleted	3.11/4.11-1
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BFN Unit 2

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AMENDMENT NO. 229

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1.0 <u>DEFINITIONS</u> (Cont'd)

 <u>Simulated Automatic Actuation</u> - Simulated automatic actuation means applying a simulated signal_to_the sensor_to_actuate_the______ circuit in question.

- 10. Logic A logic is an arrangement of relays, contacts, and other components that produces a decision output.
 - (a) <u>Initiating</u> A logic that receives signals from channels and produces decision outputs to the actuation logic.
 - (b) <u>Actuation</u> A logic that receives signals (either from initiation logic or channels) and produces decision outputs to accomplish a protective action.
- 11. <u>Channel Calibration</u> Shall be the adjustment, as necessary, of the channel output such that it responds with necessary range and accuracy to known values of the parameters which the channel monitors. The channel calibration shall encompass the entire channel including alarm and/or trip functions and shall include the channel functional test. The channel calibration may be performed by any series of sequential, overlapping or total channel steps such that the entire channel is calibrated. Non-calibratable components shall be excluded from this requirement, but will be included in channel functional test and source check.
- 12. Channel Functional Test Shall be:
 - a. Analog/Digital Channels the injection of a simulated signal into the channel as close to the sensor as practicable to verify OPERABILITY including alarm and/or trip functions.
 - b. Bistable Channels the injection of a simulated signal into the sensor to verify OPERABILITY including alarm and/or trip functions.

13. (Deleted)

AMENDMENT NO. 246

1.0 <u>DEFINITIONS</u> (Cont'd)

- W. Functional Tests A functional test is the manual operation or initiation of a system, subsystem, or component to verify that it functions within design tolerances (e.g., the manual start of a core spray pump to verify that it runs and that it pumps the required volume of water).
- X. <u>Shutdown</u> The reactor is in a shutdown condition when the reactor mode switch is in the shutdown mode position and no core alterations are being performed.
- Y. <u>Engineered Safeguard</u> An engineered safeguard is a safety system the actions of which are essential to a safety action required in response to accidents:
- <u>Reportable Event</u> A reportable event shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.
- AA. (Deleted)
- BB. Offsite Dose Calculation Manual (ODCM) Shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the Environmental Radiological Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Section 6.8.4 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Annual Radioactive Effluent Release Reports required by Specifications 6.9.1.5 and 6.9.1.8.
- CC. <u>Purge or purging</u> The controlled process of discharging air or gas from the primary containment to maintain temperature, pressure, humidity, concentration, or other operating condition in such a manner that replacement air or gas is required to purify the containment.
- DD. <u>Process Control Program</u> Shall contain the current formulas, sampling, analyses, test, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61 and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.
- EE. (Deleted)
- FF. <u>Venting</u> The controlled process of discharging air or gas from the primary containment to maintain temperature, pressure, humidity, concentration, or other operating condition in such a manner that replacement air or gas is not provided or required. Vent, used in system names, does not imply a venting process.

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1.0 DEFINITIONS (Cont'd)

- GG: <u>Site Boundary</u> Shall be that line beyond which the land is not owned, leased, or otherwise controlled by TVA.
- HH. <u>Unrestricted Area</u> Any area at or beyond the SITE BOUNDARY to which access is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials or any area within the SITE BOUNDARY used for industrial, commercial, institutional, or recreational purposes.
- II. Dose Equivalent I-131 The DOSE EQUIVALENT I-131 shall be the concentration of I-131 (in μ Ci/gm) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factor used for this calculation shall be those listed in Table III of TID-14844 "Calculation of Distance Factors for Power and Test Reactor Sites".
- JJ. <u>Gaseous Waste Treatment System</u> 'The charcoal adsorber vessels installed on the discharge of the steam jet air ejector to provide delay to a unit's offgas activity prior to release.
- KK. <u>Members of the Public</u> Any individual except when that individual receives an occupational dose (as defined in 10 CFR 20).
- LL. <u>Surveillance</u> Surveillance Requirements shall be met during the OPERATIONAL CONDITIONS or other conditions specified for individual limiting conditions for operation unless otherwise stated in an individual Surveillance Requirements. Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval. It is not intended that this (extension) provision be used repeatedly as a convenience to extend surveillance intervals beyond that specified for surveillances that are not performed during refueling outages.

Performance of a Surveillance Requirement within the specified time interval shall constitute compliance and OPERABILITY requirements for a limiting condition for operation and associated action statements unless otherwise required by these specifications. Surveillance Requirements do not have to be performed on inoperable equipment.

If it is discovered that a surveillance was not performed within its specified frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified frequency, whichever is less. This delay period is permitted to allow performance of the surveillance.

BFN Unit 2 AMENDMENT NO. 246

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1.0 DEFINITIONS (Cont'd)

If the surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable condition(s) must be entered.

When the surveillance is performed within the delay period and the surveillance is not met, the LCO must immediately be declared not met, and the applicable condition(s) must be entered.

- MM. <u>Surveillance Requirements for ASME Section XI Pump and Valve Program</u> - Surveillance Requirements for Inservice Testing of ASME Code Class 1, 2, and 3 components shall be applicable as follows:
 - Inservice testing of ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55(g)(6)(i).
 - 2. Surveillance intervals specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for the inservice testing activities required by the ASME Boiler and Pressure . Vessel Code and applicable Addenda shall be applicable as follows in these technical specifications:

ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice <u>testing activities</u>	Required frequencies for performing inservice <u>testing activities</u>
Weekly	At least once per 7 days

Weekly	*	At	least	once	per	7 da	ys
Monthly	•	At	least	once	per	31 d	lays
Quarterly or every 3 months	5	At	least	once	per	92 d	lays
Semiannually or every 6 mor	nths	At	least	once	per	184	days
Every 9 months		At	least	once	per	276	days
Yearly or annually		At	least	once	per	366	days

- 3. The provisions of Specification 1.0.LL are applicable to the above required frequencies for performing inservice testing activities.
- 4. Performance of the above inservice testing activities shall be in addition to other specified surveillance requirements.
- 5. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any technical specification.
- The inservice inspection program for piping identified in NRC Generic Letter 88-01 shall be performed in accordance with the staff positions on schedule, methods, personnel, and sample expansion included in this generic letter.

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BFN Unit 2	Minimum No. Instrument Channels Operable <u>per Trip Sys(1)(11)</u>	Function	Trip Level Setting	Action (1)	Remarks
	1(14)	Instrument Channel - Reactor Building Ventilation High Radiation - Refueling Zone	≤ 100 mr/hr or downscale	F	 l upscale channel or 2 downscale channels will a. Initiate SGTS b. Isolate refueling floor c. Close atmosphere control system.
	2(7) (8)	Instrument Channel SGTS Flow - Train A R. H. Heaters	<u>></u> 2000 cfm and <u><</u> 4000 cfm	H and (A or F)	Below 2000 cfm airflow R.H. heaters shall be shut off.
	2(7) (8)	Instrument Channel SGTS Flow - Train B R. H. Heaters	<u>></u> 2000 cfm and <u><</u> 4000 cfm	H and (A or F)	Below 2000 cfm airflow R.H. heaters shall be shut off.
3.2/4.2-9	2(7) (8)	Instrument Channel SGTS Flow - Train C R. H. Heaters	≥ 2000 cfm and ≤ 4000 cfm	H and ' (A or F)	Below 2000 cfm airflow R.H. heaters shall be shut off.
ę	1	Reactor Building Isolation Timer (refueling floor)	0 <u><</u> t <u><</u> 2 secs.	H or F	 Below trip setting prevents spurious trips and system perturbations from initiating isolation.
) ·	Reactor Building Isolation Timer (reactor zone)	0 <u><</u> t <u><</u> 2 secs.	G or A or H	 Below trip setting prevents spurious trips and system perturbations from initiating isolation.
AMENDMENT NO. 246	, × 2(10)	Group l (Initiating) Logic	N/A	A 	 Group 1: A Group 1 isolation is actuated by any of the following conditions: a. Reactor Vessel Low Low Water Level b. Deleted c. Main Steamline High Flow d. Main Steamline Space High Temperature e. Main Steamline Low Pressure

TABLE 3.2.A (Continued) PRIMARY CONTAINMENT AND REACTOR BUILDING ISOLATION INSTRUMENTATION

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BFN Unit 2	Minimum No. Instrument Channels Operable	,			
	<u>per Trip Sys(1)(11)</u>	Function	Trip Level Setting	Action (1)	Remarks
•	1	Group 1 (Actuation) Logic	N/A	B	 Group 1: A Group 1 isolation is actuated by any of the following conditions: Reactor Vessel Low Low Water Level Deleted Main Steamline High Flow Hain Steamline Space High Temperature Main Steamline Low Pressure
3.2/4.2-10	2	Group 2 (Initiating) Logic	N/A	A or (B and E)	 Group 2: A Group 2 isolation is actuated by any of the following conditions: Reactor Vessel Low Water Level High Drywell Pressure
	1	Group 2 (RHR Isolation- Actuation) Logic	. N/A	D	
	1	Group 8 (TIP-Actuation) Logic	N/A	J	
.2-1(ו	Group 2 (Drywell Sump Drains-Actuation) Logic	N/A	К	
0	. 1	Group 2 (Reactor Building & Refueling Floor, and Drywell Vent and Purge- Actuation) Logic	N/A ,	F and G	1. Part of Group 6 Logic
AMENDMENT NO. 246	2	Group 3 (Initiating) Logic	N/A	C	 Group 3: A Group 3 isolation is actuated by any of the following conditions: Reactor Vessel Low Water Level Reactor Water Cleanup (RWCU) System High Temperature in the main steam valve vault RWCU System High Temperature in the RWCU pump room 2A RWCU System High Temperature in the RWCU pump room 2B RWCU System High Temperature in the RWCU pump room 2B RWCU System High Temperature in the RWCU heat exchanger room RWCU System High Temperature in the space near the pipe trench containing RWCU piping

TABLE 3.2.A (Continued) PRIMARY CONTAINMENT AND REACTOR BUILDING ISOLATION INSTRUMENTATION

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BFN Unit 2	Minimum No. Operable Per <u>Trip Sys(1)</u>	Function	Trip Level Setting	Action	Remarks
	2	Instrument Channel - Reactor Low Water Level (LIS-3-58A-D)	≥ 470" above vessel zero.	A	 Below trip setting initiates HPCI.
	2	Instrument Channel – Reactor Low Water Level (LIS-3-58A-D)	≥ 470" above vessel zero.	Α.	1. Multiplier relays initiate RCIC.
	2 (19)	Instrument Channel - Reactor Low Water Level (LS-3-58A-D)	≥ 398" above vessel zero.	A	 Below trip setting initiates - CSS. Multiplier relays initiate
	•		-	•	LPCI. 2. Multiplier relay from CSS
ω			-		initiates accident signal (15).
3.2/4.2-14	2 (16)	Instrument Channel - Reactor Low Water Level (LS-3-58A-D)	≥ 398" above vessel zero.	A	 Below trip settings, in conjunction with drywell high pressure, low water level permissive, ADS timer timed out and CSS or RHR pump running, initiates ADS.
AMENDI			•		 Below trip settings, in conjunction with low reactor water level permissive, ADS timer timed out, ADS high drywell pressure bypass timer timed out, CSS or RHR pump running,
AMENDMENT NO.				-	initiates ADS.
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TABLE 3.2.B INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

		•			
Minimum No. Operable Per Trip_Sys(1)_	Function	Trip Level Setting	Action	·	Remarks
1 (16)	Instrument Channel - Reactor Low Water Level Permissive (LIS-3-184, 185)	≥ 544" above vessel zero.	A	1.	Below trip setting permissive for initiating signals on ADS
1	Instrument Channel - Reactor Low Water Level (LIS-3-52 and LIS-3-62A)	≥ 312 5/16" above vessel 'zero. (2/3 core height)	A	1. ,	Below trip setting prevents inadvertent operation of containment spray during accident condition.
2 (18)	Instrument Channel - Drywell High Pressure (PIS-64-58 E-H)	1 <u><</u> p≤2.5 psig	A	1.	Below trip setting prevents inadvertent operation of containment spray during accident conditions.
2 (18)	Instrument Channel - Drywell High Pressure (PIS-64-58 A-D)	<u><</u> 2.5 psig	A •	1.	Above trip setting in con- junction with low reactor pressure initiates CSS. Multiplier relays initiate HPCI.
	•	,		2.	Multiplier relay from CSS initiates accident signal. (1
2 (18)	Instrument Channel - Drywell High Pressure (PIS-64-58A-D)	<u><</u> 2.5 psig	A	1.	Above trip setting in conjunction with low reactor pressure initiates LPCI.
2 (16) (18)	Instrument Channel - Drywell High Pressure (PIS-64-57A-D)	<u><</u> 2.5 psig	A	1.	Above trip setting, in conjunction with low reactor water level, low reactor water level permissive, ADS timer timed out, and CSS or RHR pump running, initiates ADS.

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3.9/4.9 AUXILIARY ELECTRICAL SYSTEM

LIMITING CONDITIONS FOR OPERATION

- 3.9.A. Auxiliary Electrical Equipment
 - 3. Buses and Boards Available
 - a. The respective start bus is energized for each common station-service transformer designated as an offsite power source.

b. The 4-kV bus tie board is energized and capable of supplying power to the units 1 and 2 shutdown boards if a cooling tower transformer is designated as an offsite power source.

c. The units 1 and 2 4-kV shutdown boards are energized.

SURVEILLANCE REOUIREMENTS

4.9.A. Auxiliary Electrical System

- 3. Logic Systems
 - a. Both divisions of the common accident signal logic system shall be tested every 18 months to demonstrate that it will function on actuation of the core spray system of each reactor to provide an automatic start signal to all 4 units 1 and 2 diesel generators.
 - b. Once every 18 months, the condition under which the 480-volt load shedding logic system is required shall be simulated using pendant test switches and/or pushbutton test switches to demonstrate that the load shedding logic system would initiate load shedding signals on the diesel auxiliary boards, RMOV boards, and the 480-V shutdown boards.

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LIMITING	CONDITIONS FOR OPERATION	SURVEIL	LANCE REQUIREMENTS
3.9.A.	Auxiliary Electrical Equipment	4.9.A.	Auxiliary Electrical System
3.9.A.3.	(Cont ⁱ d)	,	, ,
4	d. The 480-V shutdown boards 2A and 2B are energized.		•
٠	e. The units 1 and 2 diesel auxiliary boards are energized.		
-	f. Loss of voltage and degraded voltage relays OPERABLE on 4-kV shutdown boards A, B, C, and D.	•	
	g. Shutdown buses 1 and 2 energized.	٨	•
	 h. The 480-V reactor motor- operated valve (RMOV) boards 2D & 2E are energized with motor-generator (mg) sets 2DN, 2DA, 2EN, and 2EA in service. 	•	•
. 4.	The three 250-V unit batteries, the four shutdown board	. 4.	Undervoltage Relays
	batteries, a battery charger for each battery, and	a	a. (Deleted)
F	associated battery boards are OPERABLE.		 b. Once every 18 months, the conditions under which the loss of voltage and degraded voltage relays are required shall be simulated with an undervoltage on each
	•		shutdown board to demonstrate that the associated diesel generator will start.
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BFN Unit 2

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3.9/4.9 AUXILIARY ELECTRICAL SYSTEM

LIMITING CONDITIONS FOR OPERATION

- è ananca Latais 3.9.B Operation With Inoperable Equipment
 - 8. From and after the date that one of the 250-V shutdown board batteries and/or its associated battery board is found to be INOPERABLE for any reason, continued REACTOR POWER OPERATION is permissible during the succeeding five days in accordance with 3.9.B.7.
 - 9. When one division of the logic system is INOPERABLE, continued REACTOR POWER OPERATION is permissible under this condition for seven days, provided the CSCS requirements listed in Specification 3.9.B.3 are satisfied. The NRC shall be notified within 24 hours of the situation, the precautions to be taken during this period, and the plans to return the failed component to an **OPERABLE** state.
 - 10. (deleted)
 - 11. The following limiting conditions for operation exist for the undervoltage relays which start the diesel generators on the 4-kV shutdown boards.

SURVEILLANCE REOUIREMENTS

3.9/4.9-11

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BFN Unit 2

3,9/4,9 AUXILIARY ELECTRICAL SYSTEM

LIMITING CONDITIONS FOR OPERATION

3.9.B. <u>Operation With Inoperable</u> Equipment

- 3.9.B.11 (Cont'd)
 - a. The loss of voltage relay channel which starts the diesel generator for a complete loss of voltage on a 4-kV shutdown board may be INOPERABLE for 10 days provided the degraded voltage relay channel. on.that shutdown board is OPERABLE (within the surveillance schedule of 4.9.A.4.b).
 - b. The degraded voltage relay channel which starts the diesel generator for degraded voltage on a 4-kV shutdown board may be INOPERABLE for 10 days provided the loss of voltage relay channel on that shutdown board is OPERABLE (within the surveillance schedule of 4.9.A.4.b).
 - c. One of the three phaseto-phase degraded voltage relays provided to detect a degraded voltage on a 4-kV shutdown board may be INOPERABLE for 15 days provided both of the following conditions are satisfied.

BFN Unit 2 3.9/4.9-12

SURVEILLANCE REQUIREMENTS



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WASHINGTON, D.C. 20555-0001

TENNESSEE VALLEY AUTHORITY

DOCKET_NO. 50-296

BROWNS FERRY NUCLEAR PLANT, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 206 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 3, 1996, 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) <u>Technical Specifications</u>

2.

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 206, 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 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Frederick J. Hebdon, Director Project Directorate II-3 Division of Reactor Projects - I/II Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: September 18, 1996

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ATTACHMENT TO LICENSE AMENDMENT NO. 206

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 included to maintain document completeness.

iiiiiiiviv *1.0-111.0-111.0-121.0-12 *3.2/4.2-93.2/4.2-9 *3.2/4.2-103.2/4.2-10	REMOVE	×	INSERT
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1.0 <u>DEFINITIONS</u> (Cont'd)

- GG. <u>Site Boundary</u> Shall be that line beyond which the land is not owned, leased, or otherwise controlled by TVA.
- HH. Unrestricted Area Any area at or beyond the SITE BOUNDARY to which access is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials or any area within the SITE BOUNDARY used for industrial, commercial, institutional, or recreational purposes.
- II. Dose Equivalent I-131 The DOSE EQUIVALENT I-131 shall be the concentration of I-131 (in μ Ci/gm) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factor used for this calculation shall be those listed in Table III of TID-14844 "Calculation of Distance Factors for Power and Test Reactor Sites".
- JJ. <u>Gaseous Waste Treatment System</u> The charcoal adsorber vessels installed on the discharge of the steam jet air ejector to provide delay to a unit's offgas activity prior to release.
- KK. <u>Members of the Public</u> Any individual except when that individual receives an occupational dose (as defined in 10 CFR 20).
- LL. <u>Surveillance</u> Surveillance Requirements shall be met during the OPERATIONAL CONDITIONS or other conditions specified for individual limiting conditions for operation unless otherwise stated in an individual Surveillance Requirements. Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval. It is not intended that this (extension) provision be used repeatedly as a convenience to extend surveillance intervals beyond that specified for surveillances that are not performed during refueling outages.

Performance of a Surveillance Requirement within the specified time interval shall constitute compliance and OPERABILITY requirements for a limiting condition for operation and associated action statements unless otherwise required by these specifications. Surveillance Requirements do not have to be performed on inoperable equipment.

If it is discovered that a surveillance was not performed within its specified frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified frequency, whichever is less. This delay period is permitted to allow performance of the surveillance.

BFN Unit 3 AMENDMENT NO. 206

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1.0 DEFINITIONS (Cont'd)

If the surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable condition(s) must be entered.

When the surveillance is performed within the delay period and the surveillance is not met, the LCO must immediately be declared not met, and the applicable condition(s) must be entered.

- MM. Surveillance Requirements for ASME Section XI Pump and Valve Program -Surveillance Requirements for Inservice Testing of ASME Code Class 1, 2, and 3 components shall be applicable as follows:
 - Inservice testing of ASME Code Class 1, 2, and 3 pumps and valves 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 the Commission pursuant to 10 CFR 50, Section 50.55a(g)(6)(i).
 - 2. Surveillance intervals specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for the inservice testing activities required by the ASME Boiler and Pressure Vessel Code and applicable Addenda shall be applicable as follows in these technical specifications:

ASME Boiler and Pressure Vessel Code and applicable Addenda	Required frequencies for performing inservice
terminology for inservice	testing activities
<u>testing activities</u>	

At least once per 7 days
At least once per 31 days
At least once per 92 days
At least once per 184 days
At least once per 276 days
At least once per 366 days

- 3. The provisions of Specification 1.0.LL are applicable to the above required frequencies for performing inservice testing activities.
- 4. Performance of the above inservice testing activities shall be in addition to other specified surveillance requirements.
- 5. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any technical specification.
- 6. The inservice inspection program for piping identifed in NRC Generic Letter 88-01 shall be performed in accordance with the staff positions on schedule, methods, personnel, and sample expansion included in this generic letter.

AMENDMENT REL 205

BFN Unit 3

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Minimum No. Instrument Channels Operable	- -			- -
per Trip Sys(1)(11)	Function	Trip Level Setting	Action (1)	Remarks
2	Instrument Channel Reactor Water Cleanup System Pump Room 3A (TIS-069-836A-D)	<u>≤</u> 152.0°F	с.	Above Trip Setting initiates Isolation of Reactor Water Cleanup Lines to and from the Reactor
2	Instrument Channel Reactor Water Cleanup System Pump Room 3B (TIS-069-837A-D)	<u>≤</u> 152.0°F	C	Above Trip Setting initiates Isolation of Reactor Water Cleanup Lines to and from the Reactor
2	Instrument Channel Reactor Water Cleanup System Heat Exchanger Room (TIS-069-838A-D)	<u>≤</u> 143.0°F	с	Above Trip Setting initiates Isolation of Reactor Water Cleanup Lines to and from the Reactor
2	Instrument Channel Reactor Water Cleanup System Heat Exchanger Room (TIS-069-839A-D)	≤ 170.0°F	С	Above Trip Setting initiates Isolation of Reactor Water Cleanup Lines to and from the Reactor
1(15)	Instrument Channel - Reactor Building Ventilation High Radiation - Refueling Zone	≤ 100 mr/hr or downscale	F	 1 upscale channel or 2 downscale channels will a. Initiate SGTS b. Isolate refueling floor c. Close atmosphere control system.
2 (7) (8)	Instrument Channel SGTS Flow - Train A R. H. Heaters	≥2000 cfm and <u>≺</u> 4000 cfm	H and (A or F)	Below 2000 cfm airflow R.H. heaters shall be shut off.

TABLE 3.2.A (Continued) PRIMARY CONTAINMENT AND REACTOR BUILDING ISOLATION INSTRUMENTATION

BFN Unit 3

3.2/4.2-9

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Minimum No. Instrument Channels Operable <u>per Trip Sys(1)(11)</u>	Function	Trip Level Setting	Action(1)	Remarks
2(7) (8)	Instrument Channel SGTS Flow - Train B R. H. Heaters	<u>></u> 2000 cfm and <u><</u> 4000 cfm	H and (A or F)	Below 2000 cfm airflow R:H. heaters shall be shut off.
2(7) (8)	Instrument Channel SGTS Flow - Train C R. H. Heaters	<u>></u> 2000 cfm and <u><</u> 4000 cfm	H and (A or F)	Below 2000 cfm airflow R.H. heaters shall be shut off.
1	Reactor Building Isolation Timer (refueling floor)	0 <u><</u> t <u><</u> 2 secs	HorF 1.	Below trip setting prevents spurious trips and system perturbations from initiating isolation.
1	Reactor Building Isolation Timer (reactor zone)	0 <u><</u> t <u><</u> 2 secs.	GorÁ 1. orH	Below trip setting prevents spurious trips and system perturbations from initiating isolation.
2(10)	Group 1 (Initiating) Logic	N/A	a. b. c. d.	
	Group 1 (Actuation) Logic	N/A	a. b. c. d.	Group 1: A Group 1 isolation is actuated by any of the following conditions: Reactor Vessel Low Low Water Level Deleted Main Steamline High Flow Main Steamline Space High Temperature Main Steamline Low Pressure
	Instrument Channels Operable <u>per Trip Sys(1)(11)</u> 2(7) (8) 2(7) (8) 1 1 2(10)	Instrument Channels Operable per Trip Sys(1)(11) Function 2(7) (8) Instrument Channel SGTS Flow - Train B R. H. Heaters 2(7) (8) Instrument Channel SGTS Flow - Train C R. H. Heaters 1 Reactor Building Isolation Timer (refueling floor) 1 Reactor Building Isolation Timer (reactor zone) 2(10) Group 1 (Initiating) Logic 1 Group 1 (Actuation) Logic	Instrument Channels Operable per Trip Sys(1)(11) Function Trip Level Setting 2(7) (8) Instrument Channel SGIS Flow - Train B R. H. Heaters \geq 2000 cfm and \leq 4000 cfm 2(7) (8) Instrument Channel SGIS Flow - Train C R. H. Heaters \geq 2000 cfm and \leq 4000 cfm 1 Reactor Building Isolation Timer (refueling floor) $0 \leq t \leq 2$ secs. 1 Reactor Building Isolation Timer (reactor zone) $0 \leq t \leq 2$ secs. 2(10) Group 1 (Initiating) Logic N/A 1 Group 1 (Actuation) Logic N/A	Instrument Channels Operable per Irip Svs(1)(11)FunctionIrip Level SettingAction (1)2(7) (8)Instrument Channel SGIS Flow - Train B R. H. Heaters 22000 cfm and $\leq 4000 \text{ cfm}$ R. H. HeatersH and (A or F)2(7) (8)Instrument Channel SGIS Flow - Train C R. H. Heaters 22000 cfm and $\leq 4000 \text{ cfm}$ (A or F)H and (A or F)1Reactor Building Isolation Timer (refueling floor) $0 \leq t \leq 2 \text{ secs.}$ or HH or F1.1Reactor Building Isolation Timer (reactor zone) $0 \leq t \leq 2 \text{ secs.}$ or HG or A1.2(10)Group 1 (Initiating) LogicN/AA1.1Group 1 (Actuation) LogicN/AB1.2iGroup 1 (Actuation) LogicN/AB1.iGroup 1 (Actuation) LogicN/AB1.

TABLE 3.2.A (Continued) PRIMARY CONTAINMENT AND REACTOR BUILDING ISOLATION INSTRUMENTATION

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