



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. 150
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 February 24, 1988, 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.

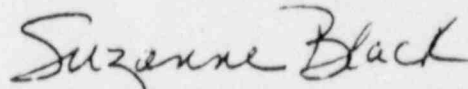
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-33 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 150, 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 Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 5, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 150

FACILITY OPERATING LICENSE NO. DPR-33

DOCKET NO. 50-259

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change. Overleaf pages* are provided to maintain document completeness.

REMOVE

3.7/4.7-19

3.7/4.7-20

3.7/4.7-21

3.7-4.7-22

3.9/4.9-3

3.9/4.9-4

3.11/4.11-3

3.11/4.11-4

INSERT

3.7/4.7-19

3.7/4.7-20

3.7/4.7-21

3.7/4.7-22*

3.9/4.9-3*

3.9/4.9-4

3.11/4.11-3

3.11/4.11-4*

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.E. Control Room Emergency Ventilation

1. Except as specified in Specification 3.7.E.3 below, both control room emergency pressurization systems shall be OPERABLE at all times when any reactor vessel contains irradiated fuel.

2. a. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq 99\%$ DOP removal and $\geq 99\%$ halogenated hydrocarbon removal when tested in accordance with ANSI N510-1975.

b. The results of laboratory carbon sample analysis shall show $\geq 90\%$ radioactive methyl iodide removal at a velocity when tested in accordance with ASTM D3803 (130°C, 95% R.H.).

c. System flow rate shall be shown to be within $\pm 10\%$ design flow when tested in accordance with ANSI N510-1975.

SURVEILLANCE REQUIREMENTS

4.7.E Control Room Emergency Ventilation

1. At least once every 18 months, the pressure drop across the combined HEPA filters and charcoal adsorber banks shall be demonstrated to be less than 6 inches of water at system design flow rate ($\pm 10\%$).

2. a. The tests and sample analysis of Specification 3.7.E.2 shall be performed at least once per operating cycle or once every 18 months, whichever occurs first for standby service or after every 720 hours of system operation and following significant painting, fire, or chemical release in any ventilation zone communicating with the system.

b. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.

c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal adsorber bank or after any structural maintenance on the system housing.

d. Each circuit shall be operated at least 10 hours every month.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.E. Control Room Emergency Ventilation

3. From and after the date that one of the control room emergency pressurization systems is made or found to be INOPERABLE for any reason, reactor operation or refueling operations is permissible only during the succeeding 7 days unless such circuit is sooner made OPERABLE.
4. If these conditions cannot be met, reactor shutdown shall be initiated and all reactors shall be in Cold Shutdown within 24 hours for reactor operations and refueling operations shall be terminated within 2 hours.

SURVEILLANCE REQUIREMENTS

4.7.E. Control Room Emergency Ventilation

3. At least once every 18 months, automatic initiation of the control room emergency pressurization system shall be demonstrated.
4. During the simulated automatic actuation test of this system (see Table 4.2.G), it shall be verified that the following dampers operate as indicated:

Close: FCO-150 B, D, E, and F
Open: FCO-151,
FCO-152

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.F. Primary Containment Purge System

1. The primary containment shall be normally vented and purged through the primary containment purge system. The standby gas treatment system may be used when primary containment purge system is INOPERABLE.

2. a. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq 99\%$ DOP removal and $\geq 99\%$ halogenated hydrocarbon removal when tested in accordance with ANSI N510-1975.

- b. The results of laboratory carbon sample analysis shall show $\geq 85\%$ radioactive methyl iodide removal when tested in accordance with ASTM D3803. (130°C 95% R.H.).

- c. System flow rate shall be shown to be within $\pm 10\%$ of design flow when tested in accordance with ANSI N510-1975.

SURVEILLANCE REQUIREMENTS

4.7.F. Primary Containment Purge System

1. At least once every 18 months, the pressure drop across the combined HEPA filters and charcoal adsorber banks shall be demonstrated to be less than 8.5 inches of water at system design flow rate ($\pm 10\%$).

2. a. The tests and sample analysis of Specification 3.7.F.2 shall be performed at least once per operating cycle or once every 18 months, whichever occurs first or after 720 hours of system operation and following significant painting, fire, or chemical release in any ventilation zone communicating with the system.

- b. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.

- c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal adsorber bank or after any structural maintenance on the system housing.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.G. Containment Atmosphere Dilution System (CAD)

1. The Containment Atmosphere Dilution (CAD) System shall be OPERABLE with:
 - a. Two independent systems capable of supplying nitrogen to the drywell and torus.
 - b. A minimum supply of 2,500 gallons of liquid nitrogen per system.
2. The Containment Atmosphere Dilution (CAD) System shall be OPERABLE whenever the reactor mode switch is in the "RUN" position.
3. If one system is INOPERABLE, the reactor may remain in operation for a period of 30 days provided all active components in the other system are OPERABLE.

SURVEILLANCE REQUIREMENTS

4.7.G. Containment Atmosphere Dilution System (CAD)

1. System Operability
 - a. At least once per month cycle each solenoid operated air/nitrogen valve through at least one complete cycle of full travel and verify that each manual valve in the flow path is open.
 - b. Verify that the CAD System contains a minimum supply of 2,500 gallons of liquid nitrogen twice per week.
2. When FCV 84-8B is INOPERABLE, each solenoid operated air/nitrogen valve of System B shall be cycled through at least one complete cycle of full travel and each manual valve in the flow path of System B shall be verified open at least once per week.

3.9/4.9 AUXILIARY ELECTRICAL SYSTEM

LIMITING CONDITIONS FOR OPERATION

3.9.A. Auxiliary Electrical Equipment

3.9.A.1.c. (Cont'd)

NOTE FOR (3) AND (4):

With no cooling tower pumps or fans running, a cooling tower transformer may be substituted for a common station-service transformer.

SURVEILLANCE REQUIREMENTS

4.9.A. Auxiliary Electrical System

4.9.A.1.b.2. (Cont'd)

permanently connected loads, the auto-connected emergency loads are energized through load sequencing, and the diesel operates for greater than or equal to five minutes while its generator is loaded with the emergency loads.

- c. Once a month the quantity of diesel fuel available shall be logged.
- d. Each diesel generator shall be given an annual inspection in accordance with instructions based on the manufacturer's recommendations.
- e. Once a month a sample of diesel fuel shall be checked for quality. The quality shall be within acceptable limits specified in Table 1 of the latest revision to ASTM D975 and logged.

3.9/4.9 AUXILIARY ELECTRICAL SYSTEM

LIMITING CONDITIONS FOR OPERATION

3.9.A. Auxiliary Electrical Equipment

2. The reactor shall not be started up (made critical) from the hot standby condition unless all of the following conditions are satisfied:
 - a. At least one offsite power source is available as specified in 3.9.A.1.c.
 - b. Three units 1 and 2 diesel generators shall be OPERABLE.
 - c. An additional source of power consisting of one of the following:
 - (1) A second offsite power source available as specified in 3.9.A.1.c.
 - (2) A fourth OPERABLE units 1 and 2 diesel generator.
 - d. Requirements 3.9.A.3 through 3.9.A.6 are met.

SURVEILLANCE REQUIREMENTS

4.9.A. Auxiliary Electrical System

2. DC Power System - Unit Batteries (250-V), Diesel-Generator Batteries (125-V) and Shutdown Board Batteries (250-V)
 - a. Every week the specific gravity, voltage and temperature of the pilot cell and overall battery voltage shall be measured and logged.
 - b. Every three months the measurement shall be made of voltage of each cell to nearest 0.1 volt, specific gravity of each cell, and temperature of every fifth cell. These measurements shall be logged.
 - c. At least once every 24 months, a battery rated discharge (capacity) test shall be performed and the voltage, time, and output current measurements shall be logged.

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.11.A. High Pressure Fire Protection System

area where protection is lost is checked hourly.

3. If only one high pressure fire pump is OPERABLE, the reactors may remain in operation for a period not to exceed 7 days, provided the requirements of Specification 3.11.A.1.b above are met.
4. If Specification 3.11.A.3 cannot be met, the reactors shall be placed in the Cold Shutdown condition in 24 hours.
5. Removal of any component in the High Pressure Fire System from service for any reason other than testing or emergency operations shall require Plant Manager approval.
6. The Raw Service Water storage tank level shall be maintained above level 723'7" by the raw service water pumps.

SURVEILLANCE REQUIREMENTS

4.11.A. High Pressure Fire Protection System

3. Raw Service Water System Testing

<u>Item</u>	<u>Frequency</u>
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Simulated automatic and manual actuation of raw service water pumps and operation of tank level switches.	Once/year
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4. The high pressure fire protection system pressure shall be logged daily.

5. Principal header and component isolation valves shall be checked open at least once every 3 months.

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11.A. High Pressure Fire Protection System

4.11.A. High Pressure Fire Protection System

- 7. If Specification 3.11.A.6 cannot be met a fire pump shall be started and run continuously until the raw service water pumps can maintain a raw service water storage tank level above 723'7".
- 8. The fire protection water distribution system shall have a minimum capacity of 2664 gpm at 250' head.
- 9. The fire protection system shall be capable of supplying the individual loads listed in Table 3.11.A.

B. CO₂ Fire Protection System

- 1. The CO₂ Fire Protection System shall be OPERABLE:
 - a. With a minimum of 8-1/2 tons (0.5 Tank) CO₂ in storage units 1 and 2.
 - b. With a minimum of 3 tons (0.5 Tank) CO₂ storage unit 3.

B. CO₂ Fire Protection System

- 1. CO₂ Fire Protection Testing:

<u>Item</u>	<u>Frequency</u>
a. Simulated automatic and manual actuation	Once/year
b. Storage tank pressure and level	Checked daily



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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-260

BROWNS FERRY NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 146
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 24, 1988, 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.

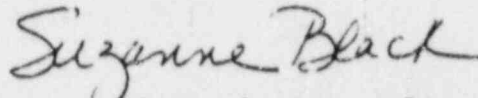
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-52 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 146, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Suzanne Black, Assistant Director
for Projects
TVA Projects Division
Office of Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 5, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 146

FACILITY OPERATING LICENSE NO. DPR-52

DOCKET NO. 50-260

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change. Overleaf pages* are provided to maintain document completeness.

REMOVE

3.7/4.7-19

3.7/4.7-20

3.7/4.7-21

3.7-4.7-22

3.9/4.9-3

3.9/4.9-4

3.11/4.11-3

3.11/4.11-4

INSERT

3.7/4.7-19

3.7/4.7-20

3.7/4.7-21

3.7/4.7-22*

3.9/4.9-3*

3.9/4.9-4

3.11/4.11-3

3.11/4.11-4*

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.E. Control Room Emergency Ventilation

1. Except as specified in Specification 3.7.E.3 below, both control room emergency pressurization systems shall be OPERABLE at all times when any reactor vessel contains irradiated fuel.
2. a. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq 99\%$ DOP removal and $\geq 99\%$ halogenated hydrocarbon removal when tested in accordance with ANSI N510-1975.

b. The results of laboratory carbon sample analysis shall show $\geq 90\%$ radioactive methyl iodide removal at a velocity when tested in accordance with ASTM D3803 (130°C, 95% R.H.).

c. System flow rate shall be shown to be within $\pm 10\%$ design flow when tested in accordance with ANSI N510-1975.

SURVEILLANCE REQUIREMENTS

4.7.E. Control Room Emergency Ventilation

1. At least once every 18 months, the pressure drop across the combined HEPA filters and charcoal adsorber banks shall be demonstrated to be less than 6 inches of water at system design flow rate ($\pm 10\%$).
2. a. The tests and sample analysis of Specification 3.7.E.2 shall be performed at least once per operating cycle or once every 18 months, whichever occurs first for standby service or after every 720 hours of system operation and following significant painting, fire, or chemical release in any ventilation zone communicating with the system.

b. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.

c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal adsorber bank or after any structural maintenance on the system housing.

d. Each circuit shall be operated at least 10 hours every month.

3.7/4.7 CONTROL ROOM SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.E. Control Room Emergency Ventilation

3. From and after the date that one of the control room emergency pressurization systems is made or found to be INOPERABLE for any reason, reactor operation or refueling operations is permissible only during the succeeding 7 days unless such circuit is sooner made OPERABLE.
4. If these conditions cannot be met, reactor shutdown shall be initiated and all reactors shall be in Cold Shutdown within 24 hours for reactor operations and refueling operations shall be terminated within 2 hours.

4.7.E. Control Room Emergency Ventilation

3. At least once every 18 months, automatic initiation of the control room emergency pressurization system shall be demonstrated.
4. During the simulated automatic actuation test of this system (see Table 4.2.G), it shall be verified that the following dampers operate as indicated:

Close: FCO-150 B, D, E, and F
Open: FCO-151
FCO-152

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.F. Primary Containment Purge System

1. The primary containment shall be normally vented and purged through the primary containment purge system. The standby gas treatment system may be used when primary containment purge system is INOPERABLE.

2. a. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq 99\%$ DOP removal and $\geq 99\%$ halogenated hydrocarbon removal when tested in accordance with ANSI N510-1975.

- b. The results of laboratory carbon sample analysis shall show $\geq 85\%$ radioactive methyl iodide removal when tested in accordance with ASTM D3803. (130°C 95% R.H.).

- c. System flow rate shall be shown to be within $\pm 10\%$ of design flow when tested in accordance with ANSI N510-1975.

SURVEILLANCE REQUIREMENTS

4.7.F. Primary Containment Purge System

1. At least once every 18 months, the pressure drop across the combined HEPA filters and charcoal adsorber banks shall be demonstrated to be less than 8.5 inches of water at system design flow rate ($\pm 10\%$).

2. a. The tests and sample analysis of Specification 3.7.F.2 shall be performed at least once per operating cycle or once every 18 months, whichever occurs first or after 720 hours of system operation and following significant painting, fire, or chemical release in any ventilation zone communicating with the system.

- b. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.

- c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal adsorber bank or after any structural maintenance on the system housing.

3./4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.G. Containment Atmosphere Dilution System (CAD)

1. The Containment Atmosphere Dilution (CAD) System shall be OPERABLE with:
 - a. Two independent systems capable of supplying nitrogen to the drywell and torus.
 - b. A minimum supply of 2,500 gallons of liquid nitrogen per system.
2. The Containment Atmosphere Dilution (CAD) System shall be OPERABLE whenever the reactor mode switch is in the "RUN" position.
3. If one system is INOPERABLE, the reactor may remain in operation for a period of 30 days provided all active components in the other system are OPERABLE.

4.7.G. Containment Atmosphere Dilution System (CAD)

1. System Operability
 - a. At least once per month cycle each solenoid operated air/nitrogen valve through at least one complete cycle of full travel and verify that each manual valve in the flow path is open.
 - b. Verify that the CAD System contains a minimum supply of 2,500 gallons of liquid nitrogen twice per week.

3.9/4.9 AUXILIARY ELECTRICAL SYSTEM

LIMITING CONDITIONS FOR OPERATION

3.9.A. Auxiliary Electrical Equipment

3.9.A.1.c. (Cont'd)

NOTE FOR (3) AND (4):

With no cooling tower pumps or fans running, a cooling tower transformer may be substituted for a common station-service transformer.

SURVEILLANCE REQUIREMENTS

4.9.A. Auxiliary Electrical System

4.9.A.1.b.2. (Cont'd)

permanently connected loads, the auto-connected emergency loads are energized through load sequencing, and the diesel operates for greater than or equal to five minutes while its generator is loaded with the emergency loads.

- c. Once a month the quantity of diesel fuel available shall be logged.
- d. Each diesel generator shall be given an annual inspection in accordance with instructions based on the manufacturer's recommendations.
- e. Once a month a sample of diesel fuel shall be checked for quality. The quality shall be within acceptable limits specified in Table 1 of the latest revision to ASTM D975 and logged.

3.9/4.9 AUXILIARY ELECTRICAL SYSTEM

LIMITING CONDITIONS FOR OPERATION

3.9.A. Auxiliary Electrical Equipment

2. The reactor shall not be started up (made critical) from the hot standby condition unless all of the following conditions are satisfied:
 - a. At least one offsite power source is available as specified in 3.9.A.1.c.
 - b. Three units 1 and 2 diesel generators shall be OPERABLE.
 - c. An additional source of power consisting of one of the following:
 - (1) A second offsite power source available as specified in 3.9.A.1.c.
 - (2) A fourth OPERABLE units 1 and 2 diesel generator.
 - d. Requirements 3.9.A.3 through 3.9.A.6 are met.

SURVEILLANCE REQUIREMENTS

4.9.A. Auxiliary Electrical System

2. DC Power System - Unit Batteries (250-V), Diesel-Generator Batteries (125-V) and Shutdown Board Batteries (250-V)
 - a. Every week the specific gravity, voltage and temperature of the pilot cell and overall battery voltage shall be measured and logged.
 - b. Every three months the measurement shall be made of voltage of each cell to nearest 0.1 volt, specific gravity of each cell, and temperature of every fifth cell. These measurements shall be logged.
 - c. At least once every 24 months, a battery rated discharge (capacity) test shall be performed and the voltage, time, and output current measurements shall be logged.

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11.A. High Pressure Fire Protection System

area where protection is lost is checked hourly.

3. If only one high pressure fire pump is OPERABLE, the reactors may remain in operation for a period not to exceed 7 days, provided the requirements of Specification 3.11.A.1.b above are met.
4. If Specification 3.11.A.3 cannot be met, the reactors shall be placed in the Cold Shutdown condition in 24 hours.
5. Removal of any component in the High Pressure Fire System from service for any reason other than testing or emergency operations shall require Plant Manager approval.
6. The Raw Service Water storage tank level shall be maintained above level 723'7" by the raw service water pumps.

4.11.A. High Pressure Fire Protection System

3. Raw Service Water System Testing

<u>Item</u>	<u>Frequency</u>
Simulated automatic and manual actuation of raw service water pumps and operation of tank level switches.	Once/year

4. The high pressure fire protection system pressure shall be logged daily.
5. Principal header and component isolation valves shall be checked open at least every 3 months

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11.A. High Pressure Fire Protection System

- 7. If Specification 3.11.A.6 cannot be met a fire pump shall be started and run continuously until the raw service water pumps can maintain a raw service water storage tank level above 723'7".
- 8. The fire protection water distribution system shall have a minimum capacity of 2664 gpm at 250' head.
- 9. The fire protection system shall be capable of supplying the individual loads listed in Table 3.11.A.

B. CO₂ Fire Protection System

- 1. The CO₂ Fire Protection System shall be OPERABLE:
 - a. With a minimum of 8-1/2 tons (0.5 Tank) CO₂ in storage units 1 and 2.
 - b. With a minimum of 3 tons (0.5 Tank) CO₂ storage unit 3.

4.11.A. High Pressure Fire Protection System

B. CO₂ Fire Protection System

- 1. CO₂ Fire Protection Testing:

<u>Item</u>	<u>Frequency</u>
a. Simulated automatic and manual actuation	Once/year
b. Storage tank pressure and level	Checked daily



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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-296

BROWNS FERRY NUCLEAR PLANT, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 121
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 February 24, 1988, 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.

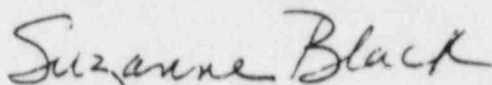
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-68 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 146, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Suzanne Black, Assistant Director
for Projects
TVA Projects Division
Office of Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 5, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 121

FACILITY OPERATING LICENSE NO. DPR-68

DOCKET NO. 50-296

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change. Overleaf pages* are provided to maintain document completeness.

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3.7/4.7-19

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3.7/4.7-22*

3.9/4.9-3*

3.9/4.9-4

3.11/4.11-3

3.11/4.11-4*

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.E. Control Room Emergency Ventilation

1. Except as specified in Specification 3.7.E.3 below, both control room emergency pressurization systems shall be OPERABLE at all times when any reactor vessel contains irradiated fuel.
2. a. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq 99\%$ DOP removal and $\geq 99\%$ halogenated hydrocarbon removal when tested in accordance with ANSI N510-1975.

b. The results of laboratory carbon sample analysis shall show $\geq 90\%$ radioactive methyl iodide removal at a velocity when tested in accordance with ASTM D3803 (130°C, 95% R.H.).

c. System flow rate shall be shown to be within $\pm 10\%$ design flow when tested in accordance with ANSI N510-1975.

SURVEILLANCE REQUIREMENTS

4.7.E Control Room Emergency Ventilation

1. At least once every 18 months, the pressure drop across the combined HEPA filters and charcoal adsorber banks shall be demonstrated to be less than 6 inches of water at system design flow rate ($\pm 10\%$).
2. a. The tests and sample analysis of Specification 3.7.E.2 shall be performed at least once per operating cycle or once every 18 months, whichever occurs first for standby service or after every 720 hours of system operation and following significant painting, fire, or chemical release in any ventilation zone communicating with the system.

b. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.

c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal adsorber bank or after any structural maintenance on the system housing.

d. Each circuit shall be operated at least 10 hours every month.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.E. Control Room Emergency Ventilation

3. From and after the date that one of the control room emergency pressurization systems is made or found to be INOPERABLE for any reason, reactor operation or refueling operations is permissible only during the succeeding 7 days unless such circuit is sooner made OPERABLE.
4. If these conditions cannot be met, reactor shutdown shall be initiated and all reactors shall be in Cold Shutdown within 24 hours for reactor operations and refueling operations shall be terminated within 2 hours.

SURVEILLANCE REQUIREMENTS

4.7.E. Control Room Emergency Ventilation

3. At least once every 18 months, automatic initiation of the control room emergency pressurization system shall be demonstrated.

4. During the simulated automatic actuation test of this system (see Table 4.2.G), it shall be verified that the following dampers operate as indicated:

Close: FCO-150 B, D, E, and F
Open: FCO-151,
FCO-152

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.F. Primary Containment Purge System

1. The primary containment shall be normally vented and purged through the primary containment purge system. The standby gas treatment system may be used when primary containment purge system is INOPERABLE.

2. a. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq 99\%$ DOP removal and $\geq 99\%$ halogenated hydrocarbon removal when tested in accordance with ANSI N510-1975.

- b. The results of laboratory carbon sample analysis shall show $\geq 85\%$ radioactive methyl iodide removal when tested in accordance with ASTM D3803. (130°C 95% R.H.).

- c. System flow rate shall be shown to be within $\pm 10\%$ of design flow when tested in accordance with ANSI N510-1975.

SUPVEILLANCE REQUIREMENTS

4.7.F. Primary Containment Purge System

1. At least once every 18 months the pressure drop across the combined HEPA filters and charcoal adsorber banks shall be demonstrated to be less than 8.5 inches of water at system design flow rate ($\pm 10\%$).

2. a. The tests and sample analysis of Specification 3.7.F.2 shall be performed at least once per operating cycle or once every 18 months, whichever occurs first or after 720 hours of system operation and following significant painting, fire, or chemical release in any ventilation zone communicating with the system.

- b. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.

- c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal adsorber bank or after any structural maintenance on the system housing.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.G. Containment Atmosphere Dilution System (CAD)

1. The Containment Atmosphere Dilution (CAD) System shall be OPERABLE with:
 - a. Two independent systems capable of supplying nitrogen to the drywell and torus.
 - b. A minimum supply of 2,500 gallons of liquid nitrogen per system.
2. The Containment Atmosphere Dilution (CAD) System shall be OPERABLE whenever the reactor mode switch is in the "RUN" position.
3. If one system is INOPERABLE, the reactor may remain in operation for a period of 30 days provided all active components in the other system are OPERABLE.
4. If Specifications 3.7.G.1 and 3.7.G.2, or 3.7.G.3 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the Cold Shutdown condition within 24 hours.
5. Primary containment pressure shall be limited to a maximum of 30 psig during repressurization following a loss of coolant accident.

SURVEILLANCE REQUIREMENTS

4.7.G. Containment Atmosphere Dilution System (CAD)

1. System Operability
 - a. At least once per month cycle each solenoid-operated air/nitrogen valve through at least one complete cycle of full travel and verify that each manual valve in the flow path is open.
 - b. Verify that the CAD System contains a minimum supply of 2,500 gallons of liquid nitrogen twice per week.

3.9/4.9 AUXILIARY ELECTRICAL SYSTEM

LIMITING CONDITIONS FOR OPERATION

3.9.A. Auxiliary Electrical
Equipment

3.9.A.1.c.(3) (Cont'd)

station-service transformer A or cooling tower transformer 1, and the Trinity line must supply unit 3 through common station-service transformer B or cooling tower transformer 2.

SURVEILLANCE REQUIREMENTS

4.9.A. Auxiliary Electrical
System

4.9.A.1.b.(3) (Cont'd)

connected emergency loads are energized through load sequencing, and the diesel operates for greater than or equal to five minutes while its generator is loaded with the emergency loads.

- c. Once a month the quantity of diesel fuel available shall be logged.
- d. Each diesel generator shall be given an annual inspection in accordance with instructions based on the manufacturer's recommendations.
- e. Once a month a sample of diesel fuel shall be checked for quality. The quality shall be within acceptable limits specified in Table 1 of the latest revision to ASTM D975 and logged.

3.9/4.9 AUXILIARY ELECTRICAL SYSTEM

LIMITING CONDITIONS FOR OPERATION

3.9.A. Auxiliary Electrical Equipment

2. The reactor shall not be started up (made critical) from the Hot Standby condition unless all of the following conditions are satisfied:

a. At least one offsite power source is available as specified in 3.9.A.1.c.

b. Three units 3 diesel generators shall be OPERABLE.

c. An additional source of power consisting of one of the following:

(1) A second offsite power source available as specified in 3.9.A.1.c.

(2) A fourth unit 3 diesel generator OPERABLE.

d. Requirements 3.9.A.3 through 3.9.A.6 are met.

SURVEILLANCE REQUIREMENTS

4.9.A. Auxiliary Electrical System

2. DC Power System - Unit Batteries (250-V), Diesel-Generator Batteries (125-V) and Shutdown Board Batteries (250-V)

a. Every week the specific gravity, voltage, and temperature of the pilot cell, and overall battery voltage shall be measured and logged.

b. Every three months the measurements shall be made of voltage of each cell to nearest 0.1 volt, specific gravity of each cell, and temperature of every fifth cell. These measurements shall be logged.

c. At least once every 24 months, a battery rated discharge (capacity) test shall be performed and the voltage, time, and output current measurements shall be logged.

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.11.A. High Pressure Fire Protection System

3.11.A.2. (Cont'd)

area where protection is lost is checked hourly.

3. If only one high pressure fire pump is OPERABLE, the reactors may remain in operation for a period not to exceed 7 days, provided the requirements of Specification 3.11.A.1.b above are met.
4. If Specification 3.11.A.3 cannot be met, the reactors shall be placed in the Cold Shutdown condition in 24 hours.
5. Removal of any component in the High Pressure Fire System from service for any reason other than testing or emergency operations shall require Plant Manager approval.
6. The Raw Service Water storage tank level shall be maintained above level 723'7" by the raw service water pumps.

SURVEILLANCE REQUIREMENTS

4.11.A. High Pressure Fire Protection System

3. Raw Service Water System Testing

<u>Item</u>	<u>Frequency</u>
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Simulated automatic and manual actuation of raw service water pumps and operation of tank level switches.	Once/year
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4. The high pressure fire protection system pressure shall be logged daily.
5. Principal header and component isolation valves shall be checked open at least once every 3 months.

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11.A. High Pressure Fire Protection System

7. If Specification 3.11.A.6 cannot be met, a fire pump shall be started and run continuously until the raw service water pumps can maintain a raw service water storage tank level above 723'7".
8. The fire protection water distribution system shall have a minimum capacity of 2,664 gpm at 250' head.
9. The fire protection system shall be capable of supplying the individual loads listed in Table 3.11.A.

B. CO₂ Fire Protection System

1. The CO₂ Fire Protection System shall be OPERABLE:
 - a. With a minimum of 8-1/2 tons (0.5 Tank) CO₂ in storage units 1 and 2.
 - b. With a minimum of 3 tons (0.5 Tank) CO₂ storage unit 3.

4.11.A. High Pressure Fire Protection System

B. CO₂ Fire Protection System

1. CO₂ Fire Protection Testing:

<u>Item</u>	<u>Frequency</u>
a. Simulated automatic and manual actuation	Once/year
b. Storage tank pressure and level	Checked daily