



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

July 20, 1988

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-259

BROWNS FERRY NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 151
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 June 1, 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.

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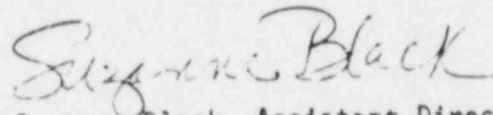
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-33 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 151, 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 20, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 151

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

3.7/4.7-13

3.7/4.7-14

3.7/4.7-15

3.7/4.7-15a

3.7/4.7-16

3.7/4.7-19

3.7/4.7-20

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3.7/4.7-13

3.7/4.7-14*

3.7/4.7-15

3.7/4.7-15a

3.7/4.7-16*

3.7/4.7-19*

3.7/4.7-20

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.B. Standby Gas Treatment System

- *1a. Except as specified in Specification 3.7.B.3 below, all three trains of the standby gas treatment system shall be OPERABLE at all times when secondary containment integrity is required.

- 1b. With no fuel in any reactor vessel, only two (2) of the three (3) standby gas treatment trains are required to be OPERABLE at all times when secondary containment integrity is required. If either of the two (2) standby gas treatment system trains become inoperable at any time when operability is required, suspend handling of irradiated fuel until two (2) trains of standby gas treatment are OPERABLE.

* With no fuel in any reactor vessel, Specification 3.7.B.1.b is applicable.

4.7.B. Standby Gas Treatment System

- 1. At least once per year, the following conditions shall be demonstrated.
 - a. Pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches of water at a flow of 9000 cfm ($\pm 10\%$).
 - b. The inlet heaters on each circuit are tested in accordance with ANSI N510-1975, and are capable of an output of at least 40 kW.
 - c. Air distribution is uniform within 20% across HEPA filters and charcoal adsorbers.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.B. Standby Gas Treatment System

2. a. The results of the in-place cold DOP and halogenated hydrocarbon tests at $\geq 10\%$ design flow 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 when tested in accordance with ASTM D3803 (130°C, 95% R.H.).
- c. System shall be shown to operate within $\pm 10\%$ design flow.

SURVEILLANCE REQUIREMENTS

4.7.B. Standby Gas Treatment System

2. a. The tests and sample analysis of Specification 3.7.B.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.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.B. Standby Gas Treatment System

4.7.B. Standby Gas Treatment System

4.7.B.2 (Cont'd)

- * 3. From and after the date that one train of the standby gas treatment system is made or found to be INOPERABLE for any reason, reactor operation and fuel handling is permissible only during the succeeding 7 days unless such circuit is sooner made OPERABLE, provided that during such 7 days all active components of the other two standby gas treatment trains shall be OPERABLE.

- d. Each train shall be operated a total of at least 10 hours every month.
- e. Test sealing of gaskets for housing doors shall be performed utilizing chemical smoke generators during each test performed for compliance with Specification 4.7.B.2.a and Specification 3.7.B.2.a.
- 3. a. Once per operating cycle automatic initiation of each branch of the standby gas treatment system shall be demonstrated from each unit's controls.
- b. At least once per year manual operability of the bypass valve for filter cooling shall be demonstrated.
- * c. When one train of the standby gas treatment system becomes INOPERABLE the other two trains shall be demonstrated to be OPERABLE within 2 hours and daily thereafter.

* Not applicable with no fuel in any reactor vessel.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.B. Standby Gas Treatment System

4.7.B. Standby Gas Treatment System

3.7.B.3 (Cont'd)

4. If these conditions cannot be met, the reactor shall be placed in a condition for which the standby gas treatment system is not required.

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3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.C. Secondary Containment

1. Secondary containment integrity shall be maintained in the reactor zone at all times except as specified in 3.7.C.2.

2. If reactor zone secondary containment integrity cannot be maintained the following conditions shall be met:
 - a. The reactor shall be made subcritical and Specification 3.3.A shall be met.
 - b. The reactor shall be cooled down below 212°F and the reactor coolant system vented.
 - c. Fuel movement shall not be permitted in the reactor zone.
 - d. Primary containment integrity maintained.

3. Secondary containment integrity shall be maintained in the refueling zone, except as specified in 3.7.C.4.

SURVEILLANCE REQUIREMENTS

4.7.C. Secondary Containment

1. Secondary containment surveillance shall be performed as indicated below:
 - a. Secondary containment capability to maintain 1/4 inch of water vacuum under calm wind (< 5 mph) conditions with a system leakage rate of not more than 12,000 cfm, shall be demonstrated at each refueling outage prior to refueling.

2. After a secondary containment violation is determined the standby gas treatment system will be operated immediately after the affected zones are isolated from the remainder of the secondary containment to confirm its ability to maintain the remainder of the secondary containment at 1/4-inch of water negative pressure under calm wind conditions.

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 per operating cycle, not to exceed 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

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 per operating cycle not to exceed 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

* LCO not applicable with no fuel in any reactor vessel.



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

July 20, 1988

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-260

BROWNS FERRY NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 147
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 June 1, 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
 - F. 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.

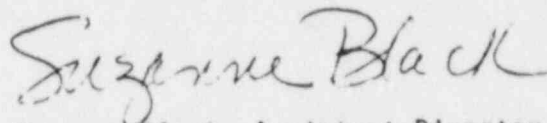
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-52 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 147, 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 20, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 147

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

3.7/4.7-13

3.7/4.7-14

3.7/4.7-15

3.7/4.7-15a

3.7/4.7-16

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3.7/4.7-13

3.7/4.7-14*

3.7/4.7-15

3.7/4.7-15a

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3.7/4.7-20

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.B. Standby Gas Treatment System

- *1a. Except as specified in Specification 3.7.B.3 below, all three trains of the standby gas treatment system shall be OPERABLE at all times when secondary containment integrity is required.

- 1b. With no fuel in any reactor vessel, only two (2) of the three (3) standby gas treatment trains are required to be OPERABLE at all times when secondary containment integrity is required. If either of the two (2) standby gas treatment system trains become inoperable at any time when operability is required, suspend handling of irradiated fuel until two (2) trains of standby gas treatment are OPERABLE.

* With no fuel in any reactor vessel, Specification 3.7.B.1.b is applicable.

SURVEILLANCE REQUIREMENTS

4.7.B. Standby Gas Treatment System

- 1. At least once per year, the following conditions shall be demonstrated.
 - a. Pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches of water at a flow of 9000 cfm ($\pm 10\%$).
 - b. The inlet heaters on each circuit are tested in accordance with ANSI N510-1975, and are capable of an output of at least 40 kW.
 - c. Air distribution is uniform within 20% across HEPA filters and charcoal adsorbers.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.B. Standby Gas Treatment System

2. a. The results of the in-place cold DOP and halogenated hydrocarbon tests at $\geq 10\%$ design flow 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 when tested in accordance with ASTM D3803 (130°C, 95% R.H.).
- c. System shall be shown to operate within $\pm 10\%$ design flow.

SURVEILLANCE REQUIREMENTS

4.7.B. Standby Gas Treatment System

2. a. The tests and sample analysis of Specification 3.7.B.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.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.B. Standby Gas Treatment System

- * 3. From and after the date that one train of the standby gas treatment system is made or found to be INOPERABLE for any reason, reactor operation and fuel handling is permissible only during the succeeding 7 days unless such circuit is sooner made OPERABLE, provided that during such 7 days all active components of the other two standby gas treatment trains shall be OPERABLE.

* Not applicable with no fuel in any reactor vessel.

SURVEILLANCE REQUIREMENTS

4.7.B. Standby Gas Treatment System

4.7.B.2 (Cont'd)

- d. Each train shall be operated a total of at least 10 hours every month.
 - e. Test sealing of gaskets for housing doors shall be performed utilizing chemical smoke generators during each test performed for compliance with Specification 4.7.B.2.a and Specification 3.7.B.2.a.
3. a. Once per operating cycle automatic initiation of each branch of the standby gas treatment system shall be demonstrated from each unit's controls.
- b. At least once per year manual operability of the bypass valve for filter cooling shall be demonstrated.
- * c. When one train of the standby gas treatment system becomes INOPERABLE the other two trains shall be demonstrated to be OPERABLE within 2 hours and daily thereafter.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.B. Standby Gas Treatment System

4.7.B. Standby Gas Treatment System

3.7.B.3 (Cont'd)

4. If these conditions cannot be met, the reactor shall be placed in a condition for which the standby gas treatment system is not required.

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3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.C. Secondary Containment

1. Secondary containment integrity shall be maintained in the reactor zone at all times except as specified in 3.7.C.2.

2. If reactor zone secondary containment integrity cannot be maintained the following conditions shall be met:
 - a. The reactor shall be made subcritical and Specification 3.3.A shall be met.
 - b. The reactor shall be cooled down below 212°F and the reactor coolant system vented.
 - c. Fuel movement shall not be permitted in the reactor zone.
 - d. Primary containment integrity maintained.

3. Secondary containment integrity shall be maintained in the refueling zone, except as specified in 3.7.C.4.

SURVEILLANCE REQUIREMENTS

4.7.C. Secondary Containment

1. Secondary containment surveillance shall be performed as indicated below:
 - a. Secondary containment capability to maintain 1/4 inch of water vacuum under calm wind (< 5 mph) conditions with a system leakage rate of not more than 12,000 cfm, shall be demonstrated at each refueling outage prior to refueling.

2. After a secondary containment violation is determined the standby gas treatment system will be operated immediately after the affected zones are isolated from the remainder of the secondary containment to confirm its ability to maintain the remainder of the secondary containment at 1/4-inch of water negative pressure under calm wind conditions.

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 per operating cycle, not to exceed 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.

* LCO not applicable with no fuel in any reactor vessel.

SURVEILLANCE REQUIREMENTS

4.7.E. Control Room Emergency Ventilation

3. At least once per operating cycle not to exceed 18 months, automatic actuation 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



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

July 20, 1988

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-296

BROWNS FERRY NUCLEAR PLANT, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 122
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 June 1, 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.

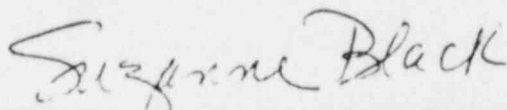
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-68 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 122, 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 20, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 122

FACILITY OPERATING LICENSE NO. DPR-68

DOCKET NO. 50-296

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

REMOVE

3.7/4.7-13

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3.7/4.7-13

3.7/4.7-14*

3.7/4.7-15

3.7/4.7-15a

3.7/4.7-16*

3.7/4.7-19*

3.7/4.7-20

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.B. Standby Gas Treatment System

- *1a. Except as specified in Specification 3.7.B.3 below, all three trains of the standby gas treatment system shall be OPERABLE at all times when secondary containment integrity is required.

- 1b. With no fuel in any reactor vessel, only two (2) of the three (3) standby gas treatment trains are required to be OPERABLE at all times when secondary containment integrity is required. If either of the two (2) standby gas treatment system trains become inoperable at any time when operability is required, suspend handling of irradiated fuel until two (2) trains of standby gas treatment are OPERABLE.

* With no fuel in any reactor vessel, Specification 3.7.B.1.b is applicable.

4.7.B. Standby Gas Treatment System

- 1. At least once per year, the following conditions shall be demonstrated.
 - a. Pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches of water at a flow of 9000 cfm ($\pm 10\%$).
 - b. The inlet heaters on each circuit are tested in accordance with ANSI N510-1975, and are capable of an output of at least 40 kW.
 - c. Air distribution is uniform within 20% across HEPA filters and charcoal adsorbers.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.B. Standby Gas Treatment System

2. a. The results of the in-place cold DOP and halogenated hydrocarbon tests at $\geq 10\%$ design flow 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 when tested in accordance with ASTM D3803 (130°C, 95% R.H.).
- c. System shall be shown to operate within $\pm 10\%$ design flow.

SURVEILLANCE REQUIREMENTS

4.7.B. Standby Gas Treatment System

2. a. The tests and sample analysis of Specification 3.7.B.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.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.B. Standby Gas Treatment System

- * 3. From and after the date that one train of the standby gas treatment system is made or found to be INOPERABLE for any reason, reactor operation and fuel handling is permissible only during the succeeding 7 days unless such circuit is sooner made OPERABLE, provided that during such 7 days all active components of the other two standby gas treatment trains shall be OPERABLE.

* Not applicable with no fuel in any reactor vessel.

SURVEILLANCE REQUIREMENTS

4.7.B. Standby Gas Treatment System

4.7.B.2 (Cont'd)

- d. Each train shall be operated a total of at least 10 hours every month.
 - e. Test sealing of gaskets for housing doors shall be performed utilizing chemical smoke generators during each test performed for compliance with Specification 4.7 B.2.a and Specification 3.7.B.2.a.
3. a. Once per operating cycle automatic initiation of each branch of the standby gas treatment system shall be demonstrated from each unit's controls.
- b. At least once per year manual operability of the bypass valve for filter cooling shall be demonstrated.
- * c. When one train of the standby gas treatment system becomes INOPERABLE the other two trains shall be demonstrated to be OPERABLE within 2 hours and daily thereafter.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.B. Standby Gas Treatment System

4.7.B. Standby Gas Treatment System

3.7.B.3 (Cont'd)

4. If these conditions cannot be met, the reactor shall be placed in a condition for which the standby gas treatment system is not required.

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3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.C. Secondary Containment

1. Secondary containment integrity shall be maintained in the reactor zone at all times except as specified in 3.7.C.2.

2. If reactor zone secondary containment integrity cannot be maintained the following conditions shall be met:
 - a. The reactor shall be made subcritical and Specification 3.3.A shall be met.
 - b. The reactor shall be cooled down below 212°F and the reactor coolant system vented.
 - c. Fuel movement shall not be permitted in the reactor zone.
 - d. Primary containment integrity maintained.

3. Secondary containment integrity shall be maintained in the refueling zone, except as specified in 3.7.C.4.

SURVEILLANCE REQUIREMENTS

4.7.C. Secondary Containment

1. Secondary containment surveillance shall be performed as indicated below:
 - a. Secondary containment capability to maintain 1/4 inch of water vacuum under calm wind (< 5 mph) conditions with a system inleakage rate of not more than 12,000 cfm, shall be demonstrated at each refueling outage prior to refueling.

2. After a secondary containment violation is determined the standby gas treatment system will be operated immediately after the affected zones are isolated from the remainder of the secondary containment to confirm its ability to maintain the remainder of the secondary containment at 1/4-inch of water negative pressure under calm wind conditions.

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 per operating cycle, not to exceed 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.

* LCO not applicable with no fuel in any reactor vessel.

SURVEILLANCE REQUIREMENTS

4.7.E. Control Room Emergency Ventilation

- 3. At least once per operating cycle not to exceed 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