UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

BALTIMORE GAS AND ELECTRIC COMPANY

DOCKET NO. 50-317

CALVERT CLIFFS NUCLEAR POWER PLANT UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 187
License No. DPR-53

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

   A. The application for amendment by Baltimore Gas and Electric Company (the licensee) dated August 27, 1993, as supplemented March 11, 1994, 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-53 is hereby amended to read as follows:

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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 187, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

for Robert A. Capra, Director
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 7, 1994

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

BALTIMORE GAS AND ELECTRIC COMPANY

DOCKET NO. 50-318

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 164
License No. DPR-69

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

   A. The application for amendment by Baltimore Gas and Electric Company (the licensee) dated August 27, 1993, as supplemented March 11, 1994, 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-69 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 164, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

for Robert A. Capra, Director
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 7, 1994

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 187 FACILITY OPERATING LICENSE NO. DPR-53

AMENDMENT NO. 164 FACILITY OPERATING LICENSE NO. DPR-69

DOCKET NOS. 50-317 AND 50-318

Revise Appendix A as follows:

Remove Pages	Insert Pages
VI	VI
1-2	1-2
3/4 6-1	3/4 6-1
3/4 6-23 thru - 30 (DRP-53)	3/4 6-23 and - 24 (DRP-53)
3/4 6-31 thru - 35 (DRP-53)*	3/4 6-25 thru - 29 (DRP-53)*
3/4 6-19 thru - 26 (DRP-69)	3/4 6-19 and - 20 (DRP-69)
3/4 6-27 thru - 31 (DRP-69)*	3/4 6-21 thru - 25 (DRP-69)*
3/4 9-12	3/4 9-12
B 3/4 6-3	B 3/4 6-3

*These pages are text rollover pages with no changes as the result of this amendment.

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LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

CHANNEL CHECK

1.6 A **CHANNEL CHECK** shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

CHANNEL FUNCTIONAL TEST

1.7 A **CHANNEL FUNCTIONAL TEST** shall be:

a. Analog channels - the injection of a simulated signal into the channel as close to the primary sensor as practicable to verify **OPERABILITY** including alarm and/or trip functions.

b. Bistable channels - the injection of a simulated signal into the channel sensor to verify **OPERABILITY** including alarm and/or trip functions.

CONTAINMENT INTEGRITY

1.8 **CONTAINMENT INTEGRITY** shall exist when:

1.8.1 All penetrations required to be closed during accident conditions are either:

a. Capable of being closed by an **OPERABLE** Containment Automatic Isolation Valve System, or

b. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administrative control as permitted by Specification 3.6.4.1.

1.8.2 All equipment hatches are closed and sealed,

1.8.3 Each airlock is in compliance with the requirements of Specification 3.6.1.3,

1.8.4 The containment leakage rates are within the limits of Specification 3.6.1.2, and

1.8.5 The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is **OPERABLE**.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.* #

APPLICABILITY. **MODES** 1, 2, 3 and 4.

ACTION: Without primary **CONTAINMENT INTEGRITY**, restore **CONTAINMENT INTEGRITY** within one hour or be in at least **HOT STANDBY** within the next 6 hours and in **COLD SHUTDOWN** within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary **CONTAINMENT INTEGRITY** shall be demonstrated:

a. At least once per 31 days by verifying that all penetrations** not capable of being closed by **OPERABLE** containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except for valves that are open under administrative control as permitted by Specification 3.6.4.1.

b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3.

c. By verifying that the equipment hatch is closed and sealed, prior to entering **MODE** 4 following a shutdown where the equipment hatch was opened, by conducting a Type B test per 10 CFR Part 50, Appendix J.

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* Hydrogen purge containment vent isolation valves shall be opened for containment pressure control, airborne radioactivity control, and surveillance testing purposes only.

\# The shutdown cooling isolation valves may be opened when the RCS temperature is below 300°F to establish shutdown cooling flow.

** Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed, or otherwise secured in the closed position. These penetrations shall be verified closed during each **COLD SHUTDOWN** except that such verification need not be performed more often then once per 92 days.

3/4.6 **CONTAINMENT SYSTEMS**

3/4.6.4 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.4.1 Each containment isolation valve shall be **OPERABLE.*** #

APPLICABILITY: **MODES** 1, 2, 3, and 4.

ACTION: With one or more of the isolation valve(s) inoperable, either:

a. Restore the inoperable valve(s) to **OPERABLE** status within 4 hours, or

b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or

c. Isolate the affected penetration within 4 hours by use of at least one closed manual valve or blind flange; or

d. Be in at least **HOT STANDBY** within the next 6 hours and in **COLD SHUTDOWN** within the following 30 hours.

e. The provisions of Specification 3.0.4 are not applicable provided that the affected penetration is isolated.

SURVEILLANCE REQUIREMENTS

4.6.4.1.1 Each containment isolation valve shall be demonstrated **OPERABLE**# prior to returning the valve to service after maintenance, repair, or replacement work is performed on the valve or its associated actuator, control, or power circuit by performance of a cycling test and verification of isolation time.

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* Valves that are normally closed may be opened on an intermittent basis under administrative control.

\# Containment purge isolation valves isolation times will only apply in **MODE** 6 when the valves are required to be **OPERABLE** and they are open. Isolation times for containment purge isolation valves is NA for **MODES** 1, 2, 3 and 4 per Technical Specification 3/4 6.1.7, during which time these valves must remain closed.

SURVEILLANCE REQUIREMENTS (Continued)

4.6.4.1.2 Each containment isolation valve shall be demonstrated **OPERABLE** during the **COLD SHUTDOWN** or **REFUELING MODE** at least once per **REFUELING INTERVAL** by:

a. Verifying that on each containment isolation Channel A or Channel B test signal, each required isolation valve actuates to its isolation position.

b. Verifying that on each Containment Radiation-High Test Channel A or Channel B test signal, both required containment purge valves actuate to their isolation position.

c. Verifying that on each Safety Injection Actuation Channel A or Channel B test signal, each required isolation valve actuates to its isolation position.

4.6.4.1.3 The isolation time of each power-operated or automatic containment isolation valve shall be determined to be within its limit when tested pursuant to Technical Specification 4.0.5.

3/4.6 **CONTAINMENT SYSTEMS**

3/4.6.5 COMBUSTIBLE GAS CONTROL

Hydrogen Analyzers

LIMITING CONDITION FOR OPERATION

3.6.5.1 Two independent containment hydrogen analyzers shall be **OPERABLE**.

APPLICABILITY: **MODES** 1 and 2.

ACTION:

a. With one hydrogen analyzer inoperable, restore the inoperable analyzer to **OPERABLE** status within 30 days or:

   1. Verify containment atmosphere grab sampling capability and prepare and submit a special report to the Commission pursuant to Specification 6.9.2 within the following 30 days, outlining the **ACTION** taken, the cause for the inoperability, and the plans and schedule for restoring the system to **OPERABLE** status, or

   2. Be in at least **HOT STANDBY** within the next 6 hours.

b. With both hydrogen analyzers inoperable, restore at least one inoperable analyzer to **OPERABLE** status within 72 hours or be in at least **HOT STANDBY** within the next 6 hours.

c. Specification 3.0.4 is not applicable to this requirement.

SURVEILLANCE REQUIREMENTS

4.6.5.1.1 Each hydrogen analyzer shall be demonstrated **OPERABLE** at least bi-weekly on a **STAGGERED TEST BASIS** by drawing a sample from the Waste Gas System through the hydrogen analyzer.

4.6.5.1.2 Each hydrogen analyzer shall be demonstrated **OPERABLE** at least once per 92 days on a **STAGGERED TEST BASIS** by performing a **CHANNEL CALIBRATION** using sample gases in accordance with manufacturers' recommendations.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.5 COMBUSTIBLE GAS CONTROL

Electric Hydrogen Recombiners - W

LIMITING CONDITION FOR OPERATION

3.6.5.2 Two independent Containment Hydrogen Recombiner Systems shall be **OPERABLE**.

APPLICABILITY: **MODES** 1 and 2.

ACTION: With one Hydrogen Recombiner System inoperable, restore the inoperable system to **OPERABLE** status within 30 days or be in at least **HOT STANDBY** within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.2 Each Hydrogen Recombiner System shall be demonstrated **OPERABLE**:

a. At least once per 6 months by verifying during a recombiner system functional test that the minimum heater sheath temperature increases to $\geq$ 700°F within 90 minutes and is maintained for at least 2 hours.

b. At least once per **REFUELING INTERVAL** by:

1. Performing a **CHANNEL CALIBRATION** of all recombiner instrumentation and control circuits.

2. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiners (i.e., loose wiring or structural connections, deposits of foreign materials, etc.)

3. Verifying during a recombiner system functional test that the heater sheath temperature increase to $\geq$ 1200°F within 5 hours is maintained for at least 4 hours.

4. Verifying the integrity of the heater electrical circuits by performing a continuity and resistance to ground test following the above required functional test. The resistance to ground for any heater phase shall be $\geq$ 10,000 ohms.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.6 PENETRATION ROOM EXHAUST AIR FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.6.1 Two independent containment penetration room exhaust air filter trains shall be **OPERABLE**.

APPLICABILITY: **MODES** 1, 2, and 3.

ACTION: With one containment penetration room exhaust air filter train inoperable, restore the inoperable train to **OPERABLE** status within 7 days or be in at least **HOT STANDBY** within the next 6 hours and in **COLD SHUTDOWN** within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.6.1 Each containment penetration room exhaust air filter train shall be demonstrated **OPERABLE**:

a. At least once per 31 days on **STAGGERED TEST BASIS** by initiating, from the control room, flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 minutes.

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by:

1. Verifying that the charcoal adsorbers remove $\geq$ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with Regulatory Positions C.5.a and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, while operating the filter train at a flow rate of 2000 cfm $\pm$ 10%.

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with Regulatory Positions C.5.a and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, while operating the filter train at a flow rate of 2000 cfm ± 10%.

3. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained from an adsorber tray or from an adsorber test tray in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, demonstrates a removal efficiency of ≥ 90% for radioactive methyl iodine when the sample is tested in accordance with ANSI N510-1975 (30°C, 95% R.H.).

4. Verifying a system flow rate of 2000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1975.

c. After every 720 hours of charcoal adsorber operation by:

Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained from an adsorber tray or from an adsorber test tray in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, demonstrates a removal efficiency of ≥ 90% for radioactive methyl iodine when the sample is tested in accordance with ANSI N510-1975 (30°C, 95% R.H.).

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the filter train shall be demonstrated **OPERABLE** by verifying that the charcoal adsorbers remove ≥ 99% of the halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with Regulatory Positions C.5.a and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, while operating the ventilation system at a flow rate of 2000 cfm ± 10%.

SURVEILLANCE REQUIREMENTS (Continued)

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches Water Gauge while operating the filter train at a flow rate of 2000 cfm ± 10%.

2. Verifying that the filter train starts on Containment Isolation Test Signal.

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with Regulatory Positions C.5.a and C.5.c of Regulatory Guide 1.52, Revision 2, March 1978, while operating the filter train at a flow rate of 2000 cfm ± 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with Regulatory Positions C.5.a and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, while operating the filter train at a flow rate of 2000 cfm ± 10%.

g. After maintenance affecting the air flow distribution by testing in-place and verifying that the air flow distribution is uniform within ± 20% of the average flow per unit when tested in accordance with the provisions of Section 9 of "Industrial Ventilation" and Section 8 of ANSI N510 1975.

3/4.9 REFUELING OPERATIONS

3/4.9.9 CONTAINMENT PURGE VALVE ISOLATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.9 The Containment Purge Valve Isolation System shall be **OPERABLE**.

APPLICABILITY: During **CORE ALTERATIONS** or movement of irradiated fuel within the containment.

ACTION: With the Containment Purge Valve Isolation System inoperable, close each of the penetrations providing direct access from the containment atmosphere to the outside atmosphere. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.9 The Containment Purge Valve Isolation System shall be demonstrated **OPERABLE** within 72 hours prior to the start of and at least once per 7 days during **CORE ALTERATIONS** by verifying that containment purge valve isolation occurs on manual initiation and on a high radiation test signal from the containment radiation monitoring instrumentation channels, and the isolation times are within the limits when tested pursuant to Technical Specification 4.0.5.

3/4.6.1.7 Containment Purge Supply and Exhaust Isolation Valves

This limitation ensures that containment purge supply and exhaust valves will be maintained shut during **MODES** where containment pressurization may occur as the result of LOCA or steam line break conditions. The capability of these valves to close during a containment pressurization event and provide isolation of these lines has not been established.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

3/4.6.2.1 Containment Spray System

The **OPERABILITY** of the Containment Spray System ensures that containment depressurization and cooling capability will be available in the event of a LOCA. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the accident analyses.

3/4.6.2.2 Containment Cooling System

The **OPERABILITY** of the Containment Cooling System ensures that 1) the containment air temperature will be maintained within limits during normal operation, and 2) adequate heat removal capacity is available during post-LOCA conditions.

3/4.6.3 IODINE REMOVAL SYSTEM

The **OPERABILITY** of the containment iodine filter trains ensures that sufficient iodine removal capability will be available in the event of a LOCA. The reduction in containment iodine inventory reduces the resulting **SITE BOUNDARY** radiation doses associated with containment leakage. The operation of this system and resultant iodine removal capacity are consistent with the assumptions used in the LOCA analyses.

3/4.6.4 CONTAINMENT ISOLATION VALVES

The **OPERABILITY** of the containment isolation valves ensure that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment. Containment isolation within the time limits specified in plant procedures ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

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LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

CHANNEL CHECK

1.6 A **CHANNEL CHECK** shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

CHANNEL FUNCTIONAL TEST

1.7 A **CHANNEL FUNCTIONAL TEST** shall be:

a. Analog channels - the injection of a simulated signal into the channel as close to the primary sensor as practicable to verify **OPERABILITY** including alarm and/or trip functions.

b. Bistable channels - the injection of a simulated signal into the channel sensor to verify **OPERABILITY** including alarm and/or trip functions.

CONTAINMENT INTEGRITY

1.8 **CONTAINMENT INTEGRITY** shall exist when:

1.8.1 All penetrations required to be closed during accident conditions are either:

a. Capable of being closed by an **OPERABLE** Containment Automatic Isolation Valve System, or

b. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administrative control as permitted by Specification 3.6.4.1.

1.8.2 All equipment hatches are closed and sealed,

1.8.3 Each airlock is in compliance with the requirements of Specification 3.6.1.3,

1.8.4 The containment leakage rates are within the limits of Specification 3.6.1.2, and

1.8.5 The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is **OPERABLE**.

3/4.6 **CONTAINMENT SYSTEMS**

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary **CONTAINMENT INTEGRITY** shall be maintained.* #

APPLICABILITY: **MODES** 1, 2, 3 and 4.

ACTION: Without primary **CONTAINMENT INTEGRITY**, restore **CONTAINMENT INTEGRITY** within one hour or be in at least **HOT STANDBY** within the next 6 hours and in **COLD SHUTDOWN** within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary **CONTAINMENT INTEGRITY** shall be demonstrated:

a. At least once per 31 days by verifying that all penetrations** not capable of being closed by **OPERABLE** containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except for valves that are open under administrative control as permitted by Specification 3.6.4.1.

b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3.

c. By verifying that the equipment hatch is closed and sealed, prior to entering **MODE** 4 following a shutdown where the equipment hatch was opened, by conducting a Type B test per 10 CFR Part 50, Appendix J.

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* Hydrogen purge containment vent isolation valves shall be opened for containment pressure control, airborne radioactivity control, and surveillance testing purposes only.

\# The shutdown cooling isolation valves may be opened when the RCS temperature is below 300°F to establish shutdown cooling flow.

** Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed, or otherwise secured in the closed position. These penetrations shall be verified closed during each **COLD SHUTDOWN** except that such verification need not be performed more often then once per 92 days.

3/4.6.4 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.4.1 Each containment isolation valve shall be **OPERABLE**.* #

APPLICABILITY: **MODES** 1, 2, 3, and 4.

ACTION: With one or more of the isolation valve(s) inoperable, either:

a. Restore the inoperable valve(s) to **OPERABLE** status within 4 hours, or

b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or

c. Isolate the affected penetration within 4 hours by use of at least one closed manual valve or blind flange; or

d. Be in at least **HOT STANDBY** within the next 6 hours and in **COLD SHUTDOWN** within the following 30 hours.

e. The provisions of Specification 3.0.4 are not applicable provided that the affected penetration is isolated.

SURVEILLANCE REQUIREMENTS

4.6.4.1.1 Each containment isolation valve shall be demonstrated **OPERABLE**# prior to returning the valve to service after maintenance, repair, or replacement work is performed on the valve or its associated actuator, control, or power circuit by performance of a cycling test and verification of isolation time.

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* Valves that are normally closed may be opened on an intermittent basis under administrative control.

\# Containment purge isolation valves isolation times will only apply in **MODE** 6 when the valves are required to be **OPERABLE** and they are open. Isolation times for containment purge isolation valves is NA for **MODES** 1, 2, 3 and 4 per Technical Specification 3/4 6.1.7, during which time these valves must remain closed.

SURVEILLANCE REQUIREMENTS (Continued)

4.6.4.1.2 Each containment isolation valve shall be demonstrated **OPERABLE** during the **COLD SHUTDOWN** or **REFUELING MODE** at least once per **REFUELING INTERVAL** by:

a. Verifying that on each containment isolation Channel A or Channel B test signal, each required isolation valve actuates to its isolation position.

b. Verifying that on each Containment Radiation-High Test Channel A or Channel B test signal, both required containment purge valves actuate to their isolation position.

c. Verifying that on each Safety Injection Actuation Channel A or Channel B test signal, each required isolation valve actuates to its isolation position.

4.6.4.1.3 The isolation time of each power-operated or automatic containment isolation valve shall be determined to be within its limit when tested pursuant to Technical Specification 4.0.5.

3/4.6 **CONTAINMENT SYSTEMS**

3/4.6.5 COMBUSTIBLE GAS CONTROL

Hydrogen Analyzers

LIMITING CONDITION FOR OPERATION

3.6.5.1 Two independent containment hydrogen analyzers shall be **OPERABLE**.

APPLICABILITY: **MODES** 1 and 2.

ACTION:

a. With one hydrogen analyzer inoperable, restore the inoperable analyzer to **OPERABLE** status within 30 days or:

   1. Verify containment atmosphere grab sampling capability and prepare and submit a special report to the Commission pursuant to Specification 6.9.2 within the following 30 days, outlining the action taken, the cause for the inoperability, and the plans and schedule for restoring the system to **OPERABLE** status, or

   2. Be in at least **HOT STANDBY** within the next 6 hours.

b. With both hydrogen analyzers inoperable, restore at least one inoperable analyzer to **OPERABLE** status within 72 hours or be in at least **HOT STANDBY** within the next 6 hours.

c. Specification 3.0.4 is not applicable to this requirement.

SURVEILLANCE REQUIREMENTS

4.6.5.1.1 Each hydrogen analyzer shall be demonstrated **OPERABLE** at least bi-weekly on a **STAGGERED TEST BASIS** by drawing a sample from the Waste Gas System through the hydrogen analyzer.

4.6.5.1.2 Each hydrogen analyzer shall be demonstrated **OPERABLE** at least once per 92 days on a **STAGGERED TEST BASIS** by performing a **CHANNEL CALIBRATION** using sample gases in accordance with manufacturers' recommendations.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.5 COMBUSTIBLE GAS CONTROL

Electric Hydrogen Recombiners - W

LIMITING CONDITION FOR OPERATION

3.6.5.2 Two independent Containment Hydrogen Recombiner Systems shall be **OPERABLE**.

APPLICABILITY: **MODES** 1 and 2.

ACTION: With one Hydrogen Recombiner System inoperable, restore the inoperable system to **OPERABLE** status within 30 days or be in at least **HOT STANDBY** within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.2 Each Hydrogen Recombiner System shall be demonstrated **OPERABLE**:

a. At least once per 6 months by verifying during a recombiner system functional test that the minimum heater sheath temperature increases to $\geq$ 700°F within 90 minutes and is maintained for at least 2 hours.

b. At least once per **REFUELING INTERVAL** by:

1. Performing a **CHANNEL CALIBRATION** of all recombiner instrumentation and control circuits.

2. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiners (i.e., loose wiring or structural connections, deposits of foreign materials, etc.)

3. Verifying during a recombiner system functional test that the heater sheath temperature increase to $\geq$ 1200°F within 5 hours is maintained for at least 4 hours.

4. Verifying the integrity of the heater electrical circuits by performing a continuity and resistance to ground test following the above required functional test. The resistance to ground for any heater phase shall be $\geq$ 10,000 ohms.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.6 PENETRATION ROOM EXHAUST AIR FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.6.1 Two independent containment penetration room exhaust air filter trains shall be **OPERABLE**.

APPLICABILITY: **MODES** 1, 2, and 3.

ACTION: With one containment penetration room exhaust air filter train inoperable, restore the inoperable train to **OPERABLE** status within 7 days or be in at least **HOT STANDBY** within the next 6 hours and in **COLD SHUTDOWN** within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.6.1 Each containment penetration room exhaust air filter train shall be demonstrated **OPERABLE**:

a. At least once per 31 days on **STAGGERED TEST BASIS** by initiating, from the control room, flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 minutes.

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by:

1. Verifying that the charcoal adsorbers remove $\geq$ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with Regulatory Positions C.5.a and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, while operating the filter train at a flow rate of 2000 cfm $\pm$ 10%.

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with Regulatory Positions C.5.a and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, while operating the filter train at a flow rate of 2000 cfm ± 10%.

3. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained from an adsorber tray or from an adsorber test tray in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, demonstrates a removal efficiency of ≥ 90% for radioactive methyl iodine when the sample is tested in accordance with ANSI N510-1975 (30°C, 95% R.H.).

4. Verifying a system flow rate of 2000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1975.

c. After every 720 hours of charcoal adsorber operation by:

Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained from an adsorber tray or from an adsorber test tray in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, demonstrates a removal efficiency of ≥ 90% for radioactive methyl iodine when the sample is tested in accordance with ANSI N510-1975 (30°C, 95% R.H.).

SURVEILLANCE REQUIREMENTS (Continued)

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the filter train shall be demonstrated **OPERABLE** by verifying that the charcoal adsorbers remove ≥ 99% of the halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with Regulatory Positions C.5.a and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, while operating the ventilation system at a flow rate of 2000 cfm ± 10%.

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches Water Gauge while operating the filter train at a flow rate of 2000 cfm ± 10%.

2. Verifying that the filter train starts on Containment Isolation Test Signal.

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with Regulatory Positions C.5.a and C.5.c of Regulatory Guide 1.52, Revision 2, March 1978, while operating the filter train at a flow rate of 2000 cfm ± 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with Regulatory Positions C.5.a and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, while operating the filter train at a flow rate of 2000 cfm ± 10%.

g. After maintenance affecting the air flow distribution by testing in-place and verifying that the air flow distribution is uniform within ± 20% of the average flow per unit when tested in accordance with the provisions of Section 9 of "Industrial Ventilation" and Section 8 of ANSI N510 1975.

3/4.9 REFUELING OPERATIONS

3/4.9.9 CONTAINMENT PURGE VALVE ISOLATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.9 The Containment Purge Valve Isolation System shall be **OPERABLE**.

APPLICABILITY: During **CORE ALTERATIONS** or movement of irradiated fuel within the containment.

ACTION: With the Containment Purge Valve Isolation System inoperable, close each of the penetrations providing direct access from the containment atmosphere to the outside atmosphere. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.9 The Containment Purge Valve Isolation System shall be demonstrated **OPERABLE** within 72 hours prior to the start of and at least once per 7 days during **CORE ALTERATIONS** by verifying that containment purge valve isolation occurs on manual initiation and on a high radiation test signal from the containment radiation monitoring instrumentation channels, and the isolation times are within the limits when tested pursuant to Technical Specification 4.0.5.

3/4.6.1.7 Containment Purge Supply and Exhaust Isolation Valves

This limitation ensures that containment purge supply and exhaust valves will be maintained shut during **MODES** where containment pressurization may occur as the result of LOCA or steam line break conditions. The capability of these valves to close during a containment pressurization event and provide isolation of these lines has not been established.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

3/4.6.2.1 Containment Spray System

The **OPERABILITY** of the Containment Spray System ensures that containment depressurization and cooling capability will be available in the event of a LOCA. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the accident analyses.

3/4.6.2.2 Containment Cooling System

The **OPERABILITY** of the Containment Cooling System ensures that 1) the containment air temperature will be maintained within limits during normal operation, and 2) adequate heat removal capacity is available during post-LOCA conditions.

3/4.6.3 IODINE REMOVAL SYSTEM

The **OPERABILITY** of the containment iodine filter trains ensures that sufficient iodine removal capability will be available in the event of a LOCA. The reduction in containment iodine inventory reduces the resulting **SITE BOUNDARY** radiation doses associated with containment leakage. The operation of this system and resultant iodine removal capacity are consistent with the assumptions used in the LOCA analyses.

3/4.6.4 CONTAINMENT ISOLATION VALVES

The **OPERABILITY** of the containment isolation valves ensure that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment. Containment isolation within the time limits specified in plant procedures ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.