



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. 142
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 4, 1987, 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. 142, 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



Gary G. Zech, Assistant Director
for Projects
TVA Projects Division
Office of Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 12, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 142

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

3.7/4.7-9

3.7/4.7-10

3.7/4.7-11

3.7/4.7-12

INSERT

3.7/4.7-9*

3.7/4.7-10

3.7/4.7-11

3.7/4.7-12*

4.7.A. Primary Containment

4.7.A.2. (Cont'd)

j. Continuous Leak Rate Monitor

When the primary containment is inerted the containment shall be continuously monitored for gross leakage by review of the inerting system makeup requirements. This monitoring system may be taken out of service for maintenance but shall be returned to service as soon as practicable.

k. Drywell and Torus Surfaces

The interior surfaces of the drywell and torus above the level one foot below the normal water line and outside surfaces of the torus below the water line shall be visually inspected each operating cycle for deterioration and any signs of structural damage with particular attention to piping connections and supports and for signs of distress or displacement.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.A PRIMARY CONTAINMENT

4.7.A PRIMARY CONTAINMENT

3. Pressure Suppression Chamber -
Reactor Building Vacuum Breakers

3. Pressure Suppression Chamber-
Reactor Building Vacuum Breakers

a. Except as specified in 3.7.A.3.b below, two pressure suppression chamber-reactor building vacuum breakers shall be OPERABLE at all times when primary containment integrity is required. The setpoint of the differential pressure instrumentation which actuates the pressure suppression chamber-reactor building vacuum breakers shall be 0.5 psid.

a. The pressure suppression chamber-reactor building vacuum breakers shall be exercised and the associated instrumentation including setpoint shall be functionally tested for proper operation each three months.

b. From and after the date that one of the pressure suppression chamber-reactor building vacuum breakers is made or found to be INOPERABLE for any reason, reactor operation is permissible only during the succeeding seven days, provided that the repair procedure does not violate primary containment integrity.

b. A visual examination and determination that the force required to open each vacuum breaker (check valve) does not exceed 0.5 psid will be made each refueling outage.

4. Drywell-Pressure Suppression Chamber Vacuum Breakers

4. Drywell-Pressure Suppression Chamber Vacuum Breakers

a. When primary containment is required, all drywell-suppression chamber vacuum breakers shall be OPERABLE and positioned in the fully closed position (except during testing) except as specified in 3.7.A.4.b and 3.7.A.4.c., below.

a. Each drywell-suppression chamber vacuum breaker shall be exercised through an opening-closing cycle every month.

b. One drywell-suppression chamber vacuum breaker may be nonfully closed so long as it is determined to be not more than 3° open as indicated by the position lights.

b. When it is determined that two vacuum breakers are INOPERABLE for opening at a time when operability is required, all other vacuum breaker valves shall be exercised immediately and every 15 days thereafter until the INOPERABLE valve has been returned to normal service.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.A Primary Containment

3.7.A.4 (Cont'd)

- c. Two drywell-suppression chamber vacuum breakers may be determined to be INOPERABLE for opening.
- d. If Specifications 3.7.A.4.a, 3.7.A.4.b, or 3.7.A.4.c cannot be met, the unit shall be placed in a Cold Shutdown condition in an orderly manner within 24 hours.

5. Oxygen Concentration

- a. Containment atmosphere shall be reduced to less than 4% oxygen with nitrogen gas during reactor power operation with reactor coolant pressure above 100 psig, except as specified in 3.7.A.5.b.
- b. Within the 24-hour period subsequent to placing the reactor in the RUN mode following a shutdown, the containment atmosphere oxygen concentration shall be reduced to less than 4% by volume and maintained in this condition. Deinerting may commence 24 hours prior to a shutdown.
- c. If plant control air is being used to supply the pneumatic control system inside primary containment, the reactor shall not be started, or if at power, the reactor shall be brought to a Cold Shutdown condition within 24 hours.
- d. If a leak test of the drywell to suppression chamber structure shall be conducted during each operating cycle. Acceptable leak rate is 0.09 lb/sec of primary containment atmosphere with 1 psi differential.

SURVEILLANCE REQUIREMENTS

4.7.A Primary Containment

4.7.A.4 (Cont'd)

- c. Once each operating cycle each vacuum breaker valve shall be inspected for proper operation of the valve and limit switches.
- d. A leak test of the drywell to suppression chamber structure shall be conducted during each operating cycle. Acceptable leak rate is 0.09 lb/sec of primary containment atmosphere with 1 psi differential.

5. Oxygen Concentration

- a. The primary containment oxygen concentration shall be measured and recorded daily. The oxygen measurement shall be adjusted to account for the uncertainty of the method used by adding a predetermined error function.
- b. The methods used to measure the primary containment oxygen concentration shall be calibrated once every refueling cycle.
- c. The control air supply valve for the pneumatic control system inside the primary containment shall be verified closed prior to reactor startup and monthly thereafter.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.A. Primary Containment

6. Drywell-Suppression Chamber
Differential Pressure

a. Differential pressure between the drywell and suppression chamber shall be maintained at equal to or greater than 1.1 psid except as specified in (1) and (2) below:

(1) This differential shall be established within 24 hours of achieving operating temperature and pressure. The differential pressure may be reduced to less than 1.1 psid 24 hours prior to a scheduled shutdown.

(2) This differential may be decreased to less than 1.1 psid for a maximum of four hours during required operability testing of the HPCI system, RCIC system and the drywell-pressure suppression chamber vacuum breakers.

b. If the differential pressure of Specification 3.7.A.6.a cannot be maintained and the differential pressure cannot be restored within the subsequent six-hour period, an orderly shutdown shall be initiated and the reactor shall be in the Cold Shutdown condition within 24 hours.

SURVEILLANCE REQUIREMENTS

4.7.A. Primary Containment

6. Drywell-Suppression Chamber
Differential Pressure

a. The pressure differential between the drywell and suppression chamber shall be recorded at least once each shift.



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. 138
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 4, 1987, 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.(?) 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. 138, 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


Gary G. Zech, Assistant Director
for Projects
TVA Projects Division
Office of Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 12, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 138

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

3.7/4.7-9

3.7/4.7-10

3.7/4.7-11

3.7/4.7-12

INSERT

3.7/4.7-9*

3.7/4.7-10

3.7/4.7-11

3.7/4.7-12*

4.7.A. Primary Containment

4.7.A.2. (Cont'd)

j. Continuous Leak Rate Monitor

When the primary containment is inerted the containment shall be continuously monitored for gross leakage by review of the inerting system makeup requirements. This monitoring system may be taken out of service for maintenance but shall be returned to service as soon as practicable.

k. Drywell and Torus Surfaces

The interior surfaces of the drywell and torus above the level one foot below the normal water line and outside surfaces of the torus below the water line shall be visually inspected each operating cycle for deterioration and any signs of structural damage with particular attention to piping connections and supports and for signs of distress or displacement.

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.A Primary Containment

4.7.A Primary Containment

3. Pressure Suppression Chamber -
Reactor Building Vacuum Breakers

3. Pressure Suppression Chamber -
Reactor Building Vacuum Breakers

- a. Except as specified in 3.7.A.3.b below, two pressure suppression chamber-reactor building vacuum breakers shall be OPERABLE at all times when primary containment integrity is required. The setpoint of the differential pressure instrumentation which actuates the pressure suppression chamber-reactor building vacuum breakers shall be 0.5 psid.

- a. The pressure suppression chamber-reactor building vacuum breakers shall be exercised and the associated instrumentation including setpoint shall be functionally tested for proper operation each three months.

- b. From and after the date that one of the pressure suppression chamber-reactor building vacuum breakers is made or found to be INOPERABLE for any reason, reactor operation is permissible only during the succeeding seven days, provided that the repair procedure does not violate primary containment integrity.

- b. A visual examination and determination that the force required to open each vacuum breaker (check valve) does not exceed 0.5 psid will be made each refueling outage.

4. Drywell-Pressure Suppression Chamber Vacuum Breakers

4. Drywell-Pressure Suppression Chamber Vacuum Breakers

- a. When primary containment is required, all drywell-suppression chamber vacuum breakers shall be OPERABLE and positioned in the fully closed position (except during testing) except as specified in 3.7.A.4.b and 3.7.A.4.c., below.
- b. One drywell-suppression chamber vacuum breaker may be nonfully closed so long as it is determined to be not more than 3° open as indicated by the position lights.

- a. Each drywell-suppression chamber vacuum breaker shall be exercised through an opening-closing cycle every month.
- b. When it is determined that two vacuum breakers are INOPERABLE for opening at a time when operability is required, all other vacuum breaker valves shall be exercised immediately and every 15 days thereafter until the INOPERABLE valve has been returned to normal service.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.A Primary Containment

4.7.A Primary Containment

3.7.A.4 (Cont'd)

4.7.A.4 (Cont'd)

- c. Two drywell-suppression chamber vacuum breakers may be determined to be INOPERABLE for opening.
- d. If Specifications 3.7.A.4.a, .b, or .c cannot be met, the unit shall be placed in a Cold Shutdown condition in an orderly manner within 24 hours.

- c. Once each operating cycle each vacuum breaker valve shall be inspected for proper operation of the valve and limit switches.
- d. A leak test of the drywell to suppression chamber structure shall be conducted during each operating cycle. Acceptable leak rate is 0.09 cc/sec of primary containment atmosphere with 1 psi differential.

5. Oxygen Concentration

5. Oxygen Concentration

- a. Containment atmosphere shall be reduced to less than 4% oxygen with nitrogen gas during reactor power operation with reactor coolant pressure above 100/psig, except as specified in 3.7.A.5.b.
- b. Within the 24-hour period subsequent to placing the reactor in the RUN mode following a shutdown, the containment atmosphere oxygen concentration shall be reduced to less than 4% by volume and maintained in this condition. Deinerting may commence 24 hours prior to a shutdown.
- c. If plant control air is being used to supply the pneumatic control system inside primary containment, the reactor shall not be started, or if at power, the reactor shall be brought to a Cold Shutdown condition within 24 hours.
- d. If Specification 3.7.A.5.a and 3.7.A.5.b cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a Cold Shutdown condition within 24 hours.

- a. The primary containment oxygen concentration shall be measured and recorded daily. The oxygen measurement shall be adjusted to account for the uncertainty of the method used by adding a predetermined error function.
- b. The methods used to measure the primary containment oxygen concentration shall be calibrated once every refueling cycle.
- c. The control air supply valve for the pneumatic control system inside the primary containment shall be verified closed prior to reactor startup and monthly thereafter.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.A. Primary Containment

6. Drywell-Suppression Chamber
Differential Pressure

a. Differential pressure between the drywell and suppression chamber shall be maintained at equal to or greater than 1.1 psid except as specified in (1) and (2) below:

(1) This differential shall be established within 24 hours of achieving operating temperature and pressure. The differential pressure may be reduced to less than 1.1 psid 24 hours prior to a scheduled shutdown.

(2) This differential may be decreased to less than 1.1 psid for a maximum of four hours during required operability testing of the HPCI system, RCIC system and the drywell-pressure suppression chamber vacuum breakers.

b. If the differential pressure of Specification 3.7.A.6.a cannot be maintained and the differential pressure cannot be restored within the subsequent six-hour period, an orderly shutdown shall be initiated and the reactor shall be in the Cold Shutdown condition within 24 hours.

4.7.A. Primary Containment

6. Drywell-Suppression Chamber
Differential Pressure

a. The pressure differential between the drywell and suppression chamber shall be recorded at least once each shift.



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. 113
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 4, 1987, 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. 113, 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



Gary G. Zech, Assistant Director
for Projects
TVA Projects Division
Office of Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 12, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 113

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

3.7/4.7-9

3.7/4.7-10

3.7/4.7-11

3.7/4.7-12

INSERT

3.7/4.7-9*

3.7/4.7-10

3.7/4.7-11

3.7/4.7-12*

4.7.A. Primary Containment

4.7.A.2. (Cont'd)

j. Continuous Leak Rate Monitoring

When the primary containment is inerted the containment shall be continuously monitored for gross leakage by review of the inerting system makeup requirements. This monitoring system may be taken out of service for maintenance but shall be returned to service as soon as practicable.

- k. The interior surfaces of the drywell and torus above the level one foot below the normal water line and outside surfaces of the torus below the water line shall be visually inspected each operating cycle for deterioration and any signs of structural damage with particular attention to piping connections and supports and for signs of distress or displacement.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.7.A PRIMARY CONTAINMENT

3. Pressure Suppression Chamber - Reactor Building Vacuum Breakers

a. Except as specified in 3.7.A.3.b below, two pressure suppression chamber-reactor building vacuum breakers shall be OPERABLE at all times when primary containment integrity is required. The setpoint of the differential pressure instrumentation which actuates the pressure suppression chamber-reactor building vacuum breakers shall be 0.5 psid.

b. From and after the date that one of the pressure suppression chamber-reactor building vacuum breakers is made or found to be INOPERABLE for any reason, reactor operation is permissible only during the succeeding seven days, provided that the repair procedure does not violate primary containment integrity.

4. Drywell-Pressure Suppression Chamber Vacuum Breakers

a. When primary containment is required, all drywell-suppression chamber vacuum breakers shall be OPERABLE and positioned in the fully closed position (except during testing) except as specified in 3.7.A.4.b and 3.7.A.4.c below.

b. One drywell-suppression chamber vacuum breaker may be nonfully closed so long as it is determined to be not more than 3° open as indicated by the position lights.

SURVEILLANCE REQUIREMENTS

4.7.A PRIMARY CONTAINMENT

3. Pressure Suppression Chamber- Reactor Building Vacuum Breakers

a. The pressure suppression chamber-reactor building vacuum breakers shall be exercised and the associated instrumentation including setpoint shall be checked for proper operation each three months.

b. A visual examination and determination that the force required to open each vacuum breaker (check valve) does not exceed 0.5 psid will be made each refueling outage.

4. Drywell-Pressure Suppression Chamber Vacuum Breakers

a. Each drywell-suppression chamber vacuum breaker shall be exercised through an opening-closing cycle every month.

b. When it is determined that two vacuum breakers are INOPERABLE for opening at a time when operability is required, all other vacuum breaker valves shall be exercised immediately and every 15 days thereafter until the INOPERABLE valve has been returned to normal service.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.A Primary Containment

4.7.A Primary Containment

3.7.A.4 (Cont'd)

4.7.A.4 (Cont'd)

- c. Two drywell-suppression chamber vacuum breakers may be determined to be INOPERABLE for opening.
- d. If Specifications 3.7.A.4.a, 3.7.A.4.b, or 3.7.A.4.c, cannot be met, the unit shall be placed in a Cold Shutdown condition in an orderly manner within 24 hours.

- c. Once each operating cycle, each vacuum breaker valve shall be inspected for proper operation of the valve and limit switches.
- d. A leak test of the drywell to suppression chamber structure shall be conducted during each operating cycle. Acceptable leak rate is 0.09 lb/sec of primary containment atmosphere with 1 psi differential.

5. Oxygen Concentration

5. Oxygen Concentration

- a. Containment atmosphere shall be reduced to less than 4% oxygen with nitrogen gas during reactor power operation with reactor coolant pressure above 100/psig, except as specified in 3.7.A.5.b.
- b. Within the 24-hour period subsequent to placing the reactor in the RUN mode following a shutdown, the containment atmosphere oxygen concentration shall be reduced to less than 4% by volume and maintained in this condition. Deinerting may commence 24 hours prior to a shutdown.
- c. If plant control air is being used to supply the pneumatic control system inside primary containment, the reactor shall not be started, or if at power, the reactor shall be brought to a Cold Shutdown condition within 24 hours.
- d. If the specifications of 3.7.A.5.a through 3.7.A.5.b cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a Cold Shutdown condition within 24 hours.

- a. The primary containment oxygen concentration shall be measured and recorded daily. The oxygen measurement shall be adjusted to account for the uncertainty of the method used by adding a predetermined error function.
- b. The methods used to measure the primary containment oxygen concentration shall be calibrated once every refueling cycle.
- c. The control air supply valve for the pneumatic control system inside the primary containment shall be verified closed prior to reactor startup and monthly thereafter.

3.7/4.7 CONTAINMENT SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.7.A. Primary Containment

6. Drywell-Suppression Chamber
Differential Pressure

- a. Differential pressure between the drywell and suppression chamber shall be maintained at equal to or greater than 1.1 psid except as specified in (1) and (2) below:

(1) This differential shall be established within 24 hours of achieving operating temperature and pressure. The differential pressure may be reduced to less than 1.1 psid 24 hours prior to a scheduled shutdown.

(2) This differential may be decreased to less than 1.1 psid for a maximum of four hours during required operability testing of the HPCI system, RCIC system and the drywell-pressure suppression chamber vacuum breakers.

- b. If the differential pressure of Specification 3.7.A.6.a cannot be maintained and the differential pressure cannot be restored within the subsequent six-hour period, an orderly shutdown shall be initiated and the reactor shall be in the Cold Shutdown condition within 24 hours.

4.7.A. Primary Containment

6. Drywell-Suppression Chamber
Differential Pressure

- a. The pressure differential between the drywell and suppression chamber shall be recorded at least once each shift.