



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555-0001

NORTH ATLANTIC ENERGY SERVICE CORPORATION, ET AL*

DOCKET NO. 50-443

SEABROOK STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 30
License No. NPF-86

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by North Atlantic Energy Service Corporation, et al. (the licensee), dated October 28, 1993 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.

*North Atlantic Energy Service Company (NAESCO) is authorized to act as agent for the: North Atlantic Energy Corporation, Canal Electric Company, The Connecticut Light and Power Company, Great Bay Power Corporation, Hudson Light and Power Department, Massachusetts Municipal Wholesale Electric Company, Montaup Electric Company, New England Power Company, New Hampshire Electric Cooperative, Inc., Taunton Municipal Light Plant, and The United Illuminating Company, and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

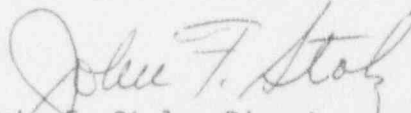
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-86 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 30 , and the Environmental Protection Plan contained in Appendix B are incorporated into Facility License No. NPF-86. NAESCO shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance, to be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stolz, Director
Project Directorate I-4
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 AMENDMENT NO. 30

FACILITY OPERATING LICENSE NO. NPF-86

DOCKET NO. 50-443

Replace the following pages of Appendix A, Technical Specifications, with the attached pages as indicated. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change. Overleaf pages have been provided.*

<u>Remove</u>	<u>Insert</u>
3/4 1-15*	3/4 1-15*
3/4 1-16	3/4 1-16
3/4 3-31*	3/4 3-31*
3/4 3-32	3/4 3-32
3/4 3-39	3/4 3-39
3/4 3-40*	3/4 3-40
3/4 4-9*	3/4 4-9*
3/4 4-10	3/4 4-10
3/4 4-23	3/4 4-23
3/4 4-24*	3/4 4-24*
3/4 4-37*	3/4 4-37*
3/4 4-38	3/4 4-38
3/4 5-1	3/4 5-1
3/4 5-2	3/4 5-2
3/4 5-5	3/3 5-5
3/4 5-6*	3/4 5-6*
3/4 6-13*	3/4 6-13*
3/4 6-14	3/4 6-14
3/4 6-17*	3/4 6-17*

3/4 6-18

3/4 6-19

3/4 6-20*

3/4 7-3

3/4 7-4

3/4 8-1

3/4 8-2

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3/4 6-18

3/4 6-19

3/4 6-20*

3/4 7-3

3/4 7-4

3/4 8-1

3/4 8-2

3/4 8-2a

REACTIVITY CONTROL SYSTEMS

3/4.1.3 MOVABLE CONTROL ASSEMBLIES

GROUP HEIGHT

LIMITING CONDITION FOR OPERATION

3.1.3.1 All full-length shutdown and control rods shall be OPERABLE and positioned within ± 12 steps (indicated position) of their group step counter demand position.

APPLICABILITY: MODES 1* and 2*.

ACTION:

- a. With one or more full-length rods inoperable because of being immovable as a result of excessive friction or mechanical interference or known to be untrippable, determine that the SHUTDOWN MARGIN requirement of Specification 3.1.1.1 is satisfied within 1 hour and be in HOT STANDBY within 6 hours.
- b. With one full-length rod trippable but inoperable due to causes other than addressed by ACTION a., above, or misaligned from its group step counter demand height by more than ± 12 steps (indicated position), POWER OPERATION may continue provided that within 1 hour:
 1. The rod is restored to OPERABLE status within the above alignment requirements, or
 2. The rod is declared inoperable and the remainder of the rods in the group with the inoperable rod are aligned to within ± 12 steps of the inoperable rod while maintaining the rod sequence and insertion limits of Specification 3.1.3.6. The THERMAL POWER level shall be restricted pursuant to Specification 3.1.3.6 during subsequent operation, or
 3. The rod is declared inoperable and the SHUTDOWN MARGIN requirement of Specification 3.1.1.1 is satisfied. POWER OPERATION may then continue provided that:
 - a) A reevaluation of each accident analysis of Table 3.1-1 is performed within 5 days; this reevaluation shall confirm that the previously analyzed results of these accidents remain valid for the duration of operation under these conditions;
 - b) The SHUTDOWN MARGIN requirement of Specification 3.1.1.1 is determined at least once per 12 hours;

*See Special Test Exceptions Specifications 3.10.2 and 3.10.3.

REACTIVITY CONTROL SYSTEMS

MOVABLE CONTROL ASSEMBLIES

GROUP HEIGHT

LIMITING CONDITION FOR OPERATION

3.1.3.1 ACTION b.3 (Continued)

- c) A power distribution map is obtained from the Incore Detector System and $F_q(Z)$ and $F_{\Delta H}^N$ are verified to be within their limits within 72 hours; and
 - d) The THERMAL POWER level is reduced to less than or equal to 75% of RATED THERMAL POWER within the next hour and within the following 4 hours the High Neutron Flux Trip Setpoint is reduced to less than or equal to 85% of RATED THERMAL POWER.
- c. With more than one rod trippable but inoperable due to causes other than addressed by ACTION a. above, POWER OPERATION may continue provided that:
- 1. Within 1 hour, the remainder of the rods in the bank(s) with the inoperable rods are aligned to within ± 12 steps of the inoperable rods while maintaining the rod sequence and insertion limits of Specification 3.1.3.6. The THERMAL POWER level shall be restricted pursuant to Specification 3.1.3.6 during subsequent operation, and
 - 2. The inoperable rods are restored to OPERABLE status within 72 hours.
- d. With more than one rod misaligned from its group step counter demand height by more than ± 12 steps (indicated position), be in HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.1.3.1.1 The position of each full-length rod shall be determined to be within the group demand limit by verifying the individual rod positions at least once per 12 hours, except during time intervals when the rod position deviation monitor is inoperable; then verify the group positions at least once per 4 hours.

4.1.3.1.2 Each full-length rod not fully inserted in the core shall be determined to be OPERABLE by movement of at least 10 steps in any one direction at least once per 92 days.

TABLE 4.3-2

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

CHANNEL FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MASTER RELAY TEST	SLAVE RELAY TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. Safety Injection (Reactor Trip, Feedwater Isolation, Start Diesel Generator, Phase "A" Isolation, Containment Ventilation Isolation, and Emergency Feedwater, Service Water to Secondary Component Cooling Water Isolation, CBA Emergency Fan/Filter Actuation, and Latching Relay).								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
c. Containment Pressure-Hi-1	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
d. Pressurizer Pressure Low	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
e. Steam Line Pressure-Low	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
2. Containment Spray								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
c. Containment Pressure-Hi-3	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

CHANNEL FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MASTER RELAY TEST	SLAVE RELAY TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
3. Containment Isolation								
a. Phase "A" Isolation								
1) Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
2) Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
3) Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements.							
b. Phase "B" Isolation								
1) Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
2) Automatic Actuation Logic Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
3) Containment Pressure-Hi-3	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
c. Containment Ventilation Isolation								
1) Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
2) Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
3) Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements.							
4) Containment On Line Purge Radioactivity- High	S	R	Q(2)	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION FOR PLANT
OPERATIONS SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>DIGITAL CHANNEL OPERATIONAL TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
1. Containment				
a. Containment - Post LOCA - Area Monitor	S	R	Q	All
b. RCS Leakage Detection				
1) Particulate Radio- activity	S	R	Q	1, 2, 3, 4
2) Gaseous Radioactivity	S	R	Q	1, 2, 3, 4
2. Containment Ventilation Isolation				
a. On Line Purge Monitor	S	R	Q	1, 2, 3, 4
b. Manipulator Crane Area Monitor	S	R	Q	6#
3. Main Steam Line	S	R	Q	1, 2, 3, 4
4. Fuel Storage Pool Areas				
a. Radioactivity-High- Gaseous Radioactivity	S	R	Q	*
5. Control Room Isolation				
a. Air Intake Radiation Level				
1) East Air Intake	S	R	Q	All
2) West Air Intake	S	R	Q	All
6. Primary Component Cooling Water				
a. Loop A	S	R	Q	All
b. Loop B	S	R	Q	All

TABLE NOTATIONS

* With irradiated fuel in the fuel storage pool areas.

During CORE ALTERNATIONS or movement of irradiated fuel within the containment.

INSTRUMENTATION

MONITORING INSTRUMENTATION

INCORE DETECTOR SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.3.2 The Incore Detector System shall be OPERABLE with:

- a. At least 75% of the detector locations and,
- b. A minimum of two detector locations per core quadrant.

An OPERABLE incore detector location shall consist of a fuel assembly containing a fixed detector string with a minimum of three OPERABLE detectors or an OPERABLE movable incore detector capable of mapping the location.

APPLICABILITY: When the Incore Detector System is used for:

- a. Recalibration of the Excore Neutron Flux Detection System, or
- b. Monitoring the QUADRANT POWER TILT RATIO, or
- c. Measurement of $F_{\Delta H}^N$, $F_Q(Z)$ and F_{xy}

ACTION:

With the Incore Detector System inoperable, do not use the system for the above applicable monitoring or calibration functions. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

(Plant procedures are used to determine that the Incore Detector System is OPERABLE.)

REACTOR COOLANT SYSTEM

SAFETY VALVES

OPERATING

LIMITING CONDITION FOR OPERATION

3.4.2.2 All pressurizer Code safety valves shall be OPERABLE with a lift setting* of 2485 psig \pm 3%.**

APPLICABILITY: MODES 1, 2, and 3#.

ACTION:

With one pressurizer Code safety valve inoperable, either restore the inoperable valve to OPERABLE status within 15 minutes or be in at least HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.2.2 No additional requirements other than those required by Specification 4.0.5.

*The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

**Within \pm 1% following pressurizer Code safety valve testing.

#Entry into this MODE is permitted for up to 24 hours to perform post-modification or post-maintenance testing to verify OPERABILITY of components. ACTION requirements shall not apply until OPERABILITY has been verified.

REACTOR COOLANT SYSTEM

3/4.4.3 PRESSURIZER

LIMITING CONDITION FOR OPERATION

3.4.3 The pressurizer shall be OPERABLE with a water volume of less than or equal to 92% of pressurizer level (1656 cubic feet), and at least two groups of pressurizer heaters each having a capacity of at least 150 kW.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

- a. With only one group of pressurizer heaters OPERABLE, restore at least two groups to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. With the pressurizer otherwise inoperable, be in at least HOT STANDBY with the Reactor Trip System breakers open within 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.3.1 The pressurizer water volume shall be determined to be within its limit at least once per 12 hours.

4.4.3.2 The capacity of each of the above required groups of pressurizer heaters shall be verified by energizing the heaters from the emergency power supply and measuring circuit current at least once each refueling interval.

REACTOR COOLANT SYSTEM

REACTOR COOLANT SYSTEM LEAKAGE

OPERATIONAL LEAKAGE

SURVEILLANCE REQUIREMENTS

4.4.6.2.2 Each Reactor Coolant System Pressure Isolation Valve specified in Table 3.4-1 shall be demonstrated OPERABLE by verifying leakage to be within its limit:

- a. At least once per 18 months,
- b. Prior to entering MODE 2 whenever the plant has been in COLD SHUTDOWN for 7 days or more and if leakage testing has not been performed in the previous 9 months,
- c. Prior to returning the valve to service following maintenance, repair, or replacement work on the valve, and
- d. Within 24 hours following valve actuation due to automatic or manual action or flow through the valve.
- e. As outlined in the ASME Code, Section XI, paragraph IWV-3427(b).

The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or 4.

TABLE 3.4-1

REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVES

<u>VALVE NUMBER</u>	<u>VALVE SIZE</u>	<u>FUNCTION</u>	<u>MAX. ALLOWABLE LEAKAGE (GPM)</u>
SI-V144	1-1/2"	SI to RCS Loop 1 Cold-Leg Injection	0.75
SI-V148	1-1/2"	SI to RCS Loop 2 Cold-Leg Injection	0.75
SI-V152	1-1/2"	SI to RCS Loop 3 Cold-Leg Injection	0.75
SI-V156	1-1/2"	SI to RCS Loop 4 Cold-Leg Injection	0.75
SI-V81	2"	SI to RCS Loop 3 Hot-Leg Injection	1.0
SI-V86	2"	SI to RCS Loop 2 Hot-Leg Injection	1.0
SI-V106	2"	SI to RCS Loop 4 Hot-Leg Injection	1.0
SI-V110	2"	SI to RCS Loop 1 Hot-Leg Injection	1.0
SI-V118	2"	SI to RCS Loop 1 Cold-Leg Injection	1.0
SI-V122	2"	SI to RCS Loop 2 Cold-Leg Injection	1.0
SI-V126	2"	SI to RCS Loop 3 Cold-Leg Injection	1.0
SI-V130	2"	SI to RCS Loop 4 Cold-Leg Injection	1.0
SI-V140	3"	SI to RCS Cold-Leg Injection	1.5
SI-V82	6"	SI to RCS Loop 3 Hot-Leg Injection	3.0
SI-V87	6"	SI to RCS Loop 2 Hot-Leg Injection	3.0
RH-V15	6"	RHR to SI Loop 1 Cold-Leg Injection	3.0
RH-V29	6"	RHR to SI Loop 3 Cold-Leg Injection	3.0
RH-V30	6"	RHR to SI Loop 4 Cold-Leg Injection	3.0
RH-V31	6"	RHR to SI Loop 2 Cold-Leg Injection	3.0
RH-V52	6"	SI to RCS Loop 1 Hot-Leg Injection	3.0
RH-V53	6"	SI to RCS Loop 4 Hot-Leg Injection	3.0
RH-V50	8"	RHR to RCS Loop 4 Hot-Leg Injection	4.0
RH-V51	8"	RHR to RCS Loop 1 Hot-Leg Injection	4.0
SI-V5	10"	SI to RCS Loop 1 Cold-Leg Injection	5.0
SI-V6	10"	SI Tank 9A Discharge Isolation	5.0
SI-V20	10"	SI to RCS Loop 2 Cold-Leg Injection	5.0
SI-V21	10"	SI Tank 9B Discharge Isolation	5.0
SI-V35	10"	SI to RCS Loop 3 Cold-Leg Injection	5.0
SI-V36	10"	SI Tank 9C Discharge Isolation	5.0
SI-V50	10"	SI to RCS Loop 4 Cold-Leg Injection	5.0
SI-V51	10"	SI Tank 9D Discharge Isolation	5.0
RC-V22*	12"	RHR Pump, 8A Suction Isolation	5.0
RC-V23*	12"	RHR Pump 8A Suction Isolation	5.0
RC-V87*	12"	RHR Pump 8B Suction Isolation	5.0
RC-V88*	12"	RHR Pump 8B Suction Isolation	5.0

*Testing per Specification 4.4.6.2.2d not required.

REACTOR COOLANT SYSTEM

STRUCTURAL INTEGRITY

LIMITING CONDITION FOR OPERATION

3.4.10 The structural integrity of ASME Code Class 1, 2, and 3 components shall be maintained in accordance with Specification 4.4.10.

APPLICABILITY: ALL MODES.

ACTION:

- a. With the structural integrity of any ASME Code Class 1 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) prior to increasing the Reactor Coolant System temperature more than 50°F above the minimum temperature required by NDT considerations.
- b. With the structural integrity of any ASME Code Class 2 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) prior to increasing the Reactor Coolant System temperature above 200°F.
- c. With the structural integrity of any ASME Code Class 3 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) from service.

SURVEILLANCE REQUIREMENTS

4.4.10 In addition to the requirements of Specification 4.0.5, each reactor coolant pump flywheel shall be inspected per the recommendations of Regulatory Position C.4.b of Regulatory Guide 1.14, Revision 1, August 1975.

REACTOR COOLANT SYSTEM

3/4.4.11 REACTOR COOLANT SYSTEM VENTS

LIMITING CONDITION FOR OPERATION

3.4.11 At least one Reactor Coolant System vent path consisting of one vent valve and one block valve powered from emergency busses shall be OPERABLE and closed* at each of the following locations:

- a. Reactor vessel head, and
- b. Pressurizer steam space.

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

ACTION:

- a. With one of the above Reactor Coolant System vent paths inoperable, STARTUP and/or POWER OPERATION may continue provided the inoperable vent path is maintained closed with power removed from the valve actuator of all the vent valves and block valves in the inoperable vent path; restore the inoperable vent path to OPERABLE status within 30 days, or, be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With both Reactor Coolant System vent paths inoperable; maintain the inoperable vent path closed with power removed from the valve actuators of all the vent valves and block valves in the inoperable vent paths, and restore at least one of the vent paths to OPERABLE status within 72 hours or be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.11.1 Each Reactor Coolant System vent path block valve not required to be closed by ACTION a. or b., above, shall be demonstrated OPERABLE at least once per COLD SHUTDOWN, if not performed within the previous 92 days, by operating the valve through one complete cycle of full travel from the control room.

4.4.11.2 Each Reactor Coolant System vent path shall be demonstrated OPERABLE at least once per 18 months by:

- a. Verifying all manual isolation valves in each vent path are locked in the open position,

*For an OPERABLE vent path using a power-operated relief valve (PORV) as the vent path, the PORV block valve is not required to be closed.

3/4.5 EMERGENCY JRE COOLING SYSTEMS

3/4.5.1 ACCUMULATORS

HOT STANDBY, STARTUP, AND POWER OPERATION

LIMITING CONDITION FOR OPERATION

3.5.1.1 Each Reactor Coolant System (RCS) accumulator shall be OPERABLE with:

- a. The isolation valve open and power removed,
- b. A contained borated water volume of between 6121 and 6596 gallons,
- c. A boron concentration of between 1900 and 2100 ppm, and
- d. A nitrogen cover-pressure of between 585 and 664 psig.

APPLICABILITY: MODES 1, 2, and 3*.

ACTION:

- a. With one accumulator inoperable, except as a result of a closed isolation valve, restore the inoperable accumulator to OPERABLE status within 8 hours or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to less than 1000 psig within the following 6 hours.
- b. With one accumulator inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in at least HOT STANDBY within 6 hours and reduce pressurizer pressure to less than 1000 psig within the following 6 hours.
- c. With one pressure or water level channel inoperable per accumulator, return the inoperable channel to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- d. With two pressure channels or two water level channels inoperable per accumulator, immediately declare the affected accumulator(s) inoperable.

SURVEILLANCE REQUIREMENTS

4.5.1.1 Each accumulator shall be demonstrated OPERABLE:

- a. At least once per 24 hours by:
 - 1) Verifying the contained borated water volume and nitrogen cover-pressure in the tanks, and

*Pressurizer pressure above 1000 psig.

EMERGENCY CORE COOLING SYSTEMS

ACCUMULATORS

HOT STANDBY, STARTUP, AND POWER OPERATION

SURVEILLANCE REQUIREMENTS

4.5.1.1 (Continued)

- 2) Verifying that each accumulator isolation valve is open.
- b. By verifying the boron concentration of the accumulator solution under the following conditions:
- 1) At least once per 31 days,
 - 2) Within 6 hours after each solution volume increase of greater than or equal to 1% of tank volume. This surveillance is not required when the volume increase makeup source is the RWST and the RWST has not been diluted since verifying that the RWST boron concentration is equal to or greater than the accumulator boron concentration limit.
- c. At least once per 31 days when the RCS pressure is above 1000 psig by verifying that power to the isolation valve operator is disconnected.
- d. At least once per 18 months by verifying that each accumulator isolation valve opens automatically under each of the following conditions:
- 1) When an actual or a simulated RCS pressure signal exceeds the P-11 (Pressurizer Pressure Block of Safety Injection) Setpoint, and
 - 2) Upon receipt of a Safety Injection test signal.

EMERGENCY CORE COOLING SYSTEMS

ECCS SUBSYSTEMS - T_{avg} GREATER THAN OR EQUAL TO 350°F

SURVEILLANCE REQUIREMENTS

4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE:

- a. At least once per 24 hours by verifying that the following valves are in the indicated positions with power to the valve operators removed:

<u>Valve Number:</u>	<u>Valve Function</u>	<u>Valve Position</u>
SI-V-3	Accumulator Isolation	Open*
SI-V-17	Accumulator Isolation	Open*
SI-V-32	Accumulator Isolation	Open*
SI-V-47	Accumulator Isolation	Open*
SI-V-114	SI Pump to Cold-Leg Isolation	Open
RH-V-14	RHR Pump to Cold-Leg Isolation	Open
RH-V-26	RHR Pump to Cold-Leg Isolation	Open
RH-V-32	RHR to Hot-Leg Isolation	Closed
RH-V-70	RHR to Hot-Leg Isolation	Closed
SI-V-77	SI to Hot-Leg Isolation	Closed
SI-V-102	SI to Hot-Leg Isolation	Closed

- b. At least once per 31 days by:

- 1) Verifying that the ECCS piping is full of water by venting the ECCS pump casing and accessible discharge piping high points, and
- 2) Verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

- c. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the containment sump and cause restriction of the pump suction during LOCA conditions. This visual inspection shall be performed:

- 1) For all accessible areas of the containment prior to establishing primary CONTAINMENT INTEGRITY, and
- 2) At least once daily of the areas affected within containment by containment entry and during the final entry when primary CONTAINMENT INTEGRITY is established.

*Pressurizer pressure above 1000 psig.

EMERGENCY CORE COOLING SYSTEMS

ECCS SUBSYSTEMS - T_{avg} GREATER THAN OR EQUAL TO 350°F

SURVEILLANCE REQUIREMENTS

4.5.2 (Continued)

d. At least once per 18 months by:

- 1) Verifying automatic interlock action of the RHR system from the Reactor Coolant System to ensure that with a simulated or actual Reactor Coolant System pressure signal greater than or equal to 365 psig, the interlocks prevent the valves from being opened.
- 2) A visual inspection of the containment sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or abnormal corrosion.

e. At least once per 18 months, during shutdown, by:

- 1) Verifying that each automatic valve in the flow path actuates to its correct position on (Safety Injection actuation and Automatic Switchover to Containment Sump) test signals, and
- 2) Verifying that each of the following pumps start automatically upon receipt of a Safety Injection actuation test signal:
 - a) Centrifugal charging pump,
 - b) Safety Injection pump, and
 - c) RHR pump.

f. By verifying that each of the following pumps develops the indicated differential pressure on recirculation flow when tested pursuant to Specification 4.0.5:

- 1) Centrifugal charging pump, ≥ 2480 psid;
- 2) Safety Injection pump, ≥ 1445 psid; and
- 3) RHR pump, ≥ 176 psid.

CONTAINMENT SYSTEMS

PRIMARY CONTAINMENT

CONTAINMENT VENTILATION SYSTEM

SURVEILLANCE REQUIREMENTS

4.6.1.7.1 Each 36-inch containment purge supply and exhaust isolation valve shall be verified to be locked closed at least once per 31 days.*

4.6.1.7.2 At least once per 6 months on a STAGGERED TEST BASIS, the inboard and outboard isolation valves with resilient material seals in each sealed closed 36-inch containment purge supply and exhaust penetration shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than or equal to $0.05 L_a$ when pressurized to P_a .

4.6.1.7.3 At least once per 92 days each 8-inch containment purge supply and exhaust isolation valve with resilient material seals shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than or equal to $0.01 L_a$ when pressurized to P_a .

4.6.1.7.4 Each 8-inch containment purge supply and exhaust isolation valve shall be verified to be sealed closed or open in accordance with Specification 3.6.1.7.b at least once per 31 days.

*Containment entry and verification that the inside 36-inch containment purge and exhaust isolation valves are locked closed is not required until a containment entry is made if no containment entry has been made since the last time the inside 36-inch containment purge and exhaust isolation valves were verified closed.

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Two independent Containment Spray Systems shall be OPERABLE with each Spray System capable of taking suction from the RWST* and automatically transferring suction to the containment sump.

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

ACTION:

With one Containment Spray System inoperable, restore the inoperable Spray System to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the inoperable Spray System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each Containment Spray System shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position is in its correct position;
- b. By verifying, that on recirculation flow, each pump develops a differential pressure of greater than or equal to 262 psi when tested pursuant to Specification 4.0.5;
- c. At least once per 18 months during shutdown, by:
 - 1) Verifying that each automatic valve in the flow path actuates to its correct position on a Containment Pressure-Hi-3 test signal, and
 - 2) Verifying that each spray pump starts automatically on a Containment Pressure-Hi-3 test signal.
- d. At least once per 10 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

*In MODE 4, when the Residual Heat Removal System is in operation, an OPERABLE flow path is one that is capable of taking suction from the refueling water storage tank upon being manually realigned.

CONTAINMENT SYSTEMS

CONTAINMENT ISOLATION VALVES

SURVEILLANCE REQUIREMENTS

4.6.3.2 Each containment isolation valve shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

- a. Verifying that on a Phase "A" Isolation test signal, each Phase "A" Isolation valve actuates to its isolation position,
- b. Verifying that on a Phase "B" Isolation test signal, each Phase "B" Isolation valve actuates to its isolation position, and
- c. Verifying that on a Containment Purge and Exhaust Isolation test signal, each purge and exhaust valve actuates to its isolation position.

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

CONTAINMENT SYSTEMS

3/4.6.4 COMBUSTIBLE GAS CONTROL

HYDROGEN MONITORS

LIMITING CONDITION FOR OPERATION

3.6.4.1 Two independent containment hydrogen monitors shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

- a. With one hydrogen monitor inoperable, restore the inoperable monitor to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.
- b. With both hydrogen monitors inoperable, restore at least one monitor to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.1 Each hydrogen monitor shall be demonstrated OPERABLE by the performance of a CHANNEL CHECK at least once per 12 hours, an ANALOG CHANNEL OPERATIONAL TEST at least once per 92 days, and at least once each refueling interval by performing a CHANNEL CALIBRATION using sample gas containing:

- a. One volume percent hydrogen, balance nitrogen; and
- b. Four volume percent hydrogen, balance nitrogen.

CONTAINMENT SYSTEMS

COMBUSTIBLE GAS CONTROL

ELECTRIC HYDROGEN RECOMBINERS

LIMITING CONDITION FOR OPERATION

3.6.4.2 Two independent 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

4.6.4.2 Each Hydrogen Recombiner System shall be demonstrated OPERABLE at least once each refueling interval by:

- a. Verifying during a Hydrogen Recombiner System functional test that the minimum heater sheath temperature increases to greater than or equal to 850°F within 90 minutes. Upon reaching 850°F, increase the power setting to maximum power for 2 minutes and verify that the power meter reads greater than or equal to 65 kW; and
- b. Performing a CHANNEL CALIBRATION of all recombiner instrumentation and control circuits,
- c. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiner enclosure (i.e., loose wiring or structural connections, deposits of foreign materials, etc.), and
- d. Verifying the integrity of all heater electrical circuits by performing a resistance to ground test following the above required functional test. The resistance to ground for any heater phase shall be greater than or equal to 10,000 ohms.

CONTAINMENT SYSTEMS

COMBUSTIBLE GAS CONTROL

HYDROGEN MIXING SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.4.3 Two independent Containment Structure Recirculation Fan Systems shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one Containment Structure Recirculation Fan inoperable, restore the inoperable fan to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.3 Each Containment Structure Recirculation Fan System shall be demonstrated OPERABLE:

- a. At least once per 92 days on a STAGGERED TEST BASIS by starting each system from the control room and verifying that the system operates for at least 15 minutes, and
- b. At least once per 18 months by verifying a system flow rate of at least 4000 cfm through the hydrogen mixing flow path.

PLANT SYSTEMS

TURBINE CYCLE

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

- a. One motor-driven emergency feedwater pump, and one startup feedwater pump capable of being powered from an emergency bus and capable of being aligned to the dedicated water volume in the condensate storage tank, and
- b. One steam turbine-driven emergency feedwater pump capable of being powered from an OPERABLE steam supply system.

APPLICABILITY: MODES 1, 2, and 3.*

ACTION:

- a. With one auxiliary feedwater pump inoperable, restore the required auxiliary feedwater pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. With two emergency feedwater pumps inoperable, restore at least one emergency feedwater pump to OPERABLE status within 12 hours and restore both emergency feedwater pumps to OPERABLE status within 72 hours, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With one emergency feedwater pump and the startup feedwater pump inoperable, restore both emergency feedwater pumps to OPERABLE status within 24 hours and all three pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- d. With three auxiliary feedwater pumps inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater pump to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.7.1.2.1 Each auxiliary feedwater pump shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 - 1) Verifying that each non-automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in its correct position;
 - 2) Verifying that each automatic valve in the flow path is in the fully open position whenever the Auxiliary Feedwater System is placed in automatic control or when above 10% RATED THERMAL POWER; and

*Not required in Mode 3 until initial criticality is achieved.

PLANT SYSTEMS

TURBINE CYCLE

AUXILIARY FEEDWATER SYSTEM

SURVEILLANCE REQUIREMENTS

4.7.1.2.1a. (Continued)

- 3) Verifying that valves FW-156 and FW-163 are OPERABLE for alignment of the startup feedwater pump to the emergency feedwater header. |

- b. At least once per 92 days on a STAGGERED TEST BASIS by: |
 - 1) Verifying that the motor-driven emergency feedwater pump develops a discharge pressure of greater than or equal to 1460 psig at a flow of greater than or equal to 270 gpm;
 - 2) Verifying that the steam turbine-driven pump develops a discharge pressure of greater than or equal to 1460 psig at a flow of greater than or equal to 270 gpm when the secondary steam supply pressure is greater than 500 psig. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3;
 - 3) Verifying that the startup feedwater pump develops a discharge pressure of greater than or equal to 1375 psig at a flow of greater than or equal to 425 gpm;

- c. At least once per 18 months during shutdown by: |
 - 1) Verifying that each automatic valve in the flow path actuates to its correct position upon receipt of an Emergency Feedwater System Actuation test signal;
 - 2) Verifying that each emergency feedwater pump starts as designed automatically upon receipt of an Emergency Feedwater Actuation System test signal;
 - 3) Verifying that with all manual actions, including power source and valve alignment, the startup feedwater pump starts within the required elapsed time; and
 - 4) Verifying that each emergency feedwater control valve closes on receipt of a high flow test signal.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E Distribution System, and
- b. Two separate and independent diesel generators, each with:
 - 1) A separate day fuel tank containing a minimum fuel volume fraction of 3/8 (600 gallons),
 - 2) A separate Fuel Storage System containing a minimum volume of 60,000 gallons of fuel,
 - 3) A separate fuel transfer pump,
 - 4) Lubricating oil storage containing a minimum total volume of 275 gallons of lubricating oil, and
 - 5) Capability to transfer lubricating oil from storage to the diesel generator unit.

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

ACTION:

- a. With an offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. source by performing Specification 4.8.1.1.a. within 1 hour and at least once per 8 hours thereafter; restore at least two offsite circuits to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ELECTRICAL POWER SYSTEMS

A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 (Continued)

ACTION:

- b. With a diesel generator inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Specification 4.8.1.1.1a within 1 hour and at least once per 8 hours thereafter. Demonstrate the OPERABILITY of the remaining diesel generator by performing Specification 4.8.1.1.2a.5) within 8 hours.* Restore at least two diesel generators to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

- c. With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. source by performing Specification 4.8.1.1.1a. within 1 hour and at least once per 8 hours thereafter. Demonstrate the OPERABILITY of the remaining diesel generator by performing Specification 4.8.1.1.2a.5) within 8 hours.* Restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore at least two offsite circuits to OPERABLE status within 24 hours and two diesel generators to OPERABLE status within 72 hours from the time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

*The OPERABILITY of the remaining diesel generator need not be verified if the diesel generator became inoperable due to:

1. Preplanned preventive maintenance or testing,
2. An inoperable support system with no potential common mode failure for the remaining diesel generator, or
3. An independently testable component with no potential common mode failure for the remaining diesel generator.

ELECTRICAL POWER SYSTEMS

A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 (Continued)

ACTION:

- d. With one diesel generator inoperable in addition to ACTION b. or c. above, verify that:
1. All required systems, subsystems, trains, components, and devices that depend on the remaining OPERABLE diesel generator as a source of emergency power are also OPERABLE, and
 2. When in MODE 1, 2, or 3, the steam-driven emergency feedwater pump is OPERABLE.

If these conditions are not satisfied within 2 hours be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

- e. With two of the above required offsite A.C. circuits inoperable; restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite source restored, restore at least two offsite circuits to OPERABLE status within 24 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- f. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing the requirements of Specification 4.8.1.1.a. within 1 hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore at least two diesel generators to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.