PSNH

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SBN-1157
T.F. B7.1.2

United States Nuclear Regulatory Commission
Washington, DC 20555

Attention: Mr. Thomas M. Novak, Acting Director
Division of PWR Licensing - A

References: (a) Construction Permits CPPR-135 and CPPR-136, Docket Nos. 50-443 and 50-444

(b) USNRC Letter dated June 26, 1986, "Changes to Seabrook Final Draft Technical Specifications," T. M. Novak to R. J. Harrison

Subject: Additional Comments on Seabrook Station Technical Specifications

Dear Sir:

We have reviewed the additional changes to the Seabrook Station Technical Specifications transmitted by Reference (b). As a result of our review and our continuing effort to assure the accuracy of the final technical specifications, we have identified several additional changes that must be incorporated into the Seabrook Technical Specifications prior to certification.

Enclosure 1 to this letter provides marked up copies of the Seabrook Final Draft Technical Specifications which reflect our comments. These comments have been discussed with the NRC staff and reflect what we believe to be the final resolution of those discussions. Upon inclusion of these comments into the Seabrook Station Technical Specifications and our verification of this inclusion we feel that certification of the technical specifications will be possible.

Specification 3.11.1.4 describes the Limiting Condition for Operation and Surveillance Requirements for liquid radioactive waste storage tanks located outside. Seabrook Station does not have any liquid radioactive waste storage tanks (permanent or temporary) located out-of-doors. This specification is therefore not applicable and must be removed prior to certification. In the event it becomes necessary to use temporary outside storage tanks for liquid radioactive waste storage at Seabrook Station, we will propose a program that contains the requirements as outlined by the technical specifications.

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P.O. Box 300 • Seabrook, NH 03874 • Telephone (603) 474-9574

It is our desire to certify the Seabrook Station Technical Specifications as soon as possible. Should you or your staff have any questions concerning these comments, please contact Mr. Warren J. Hall at (603) 474-9574, extension 4046.

Very truly yours,

George S. Thomas

Enclosure

cc: ASLB Service List

ENCLOSURE TO SBN-1157

FINAL DRAFT

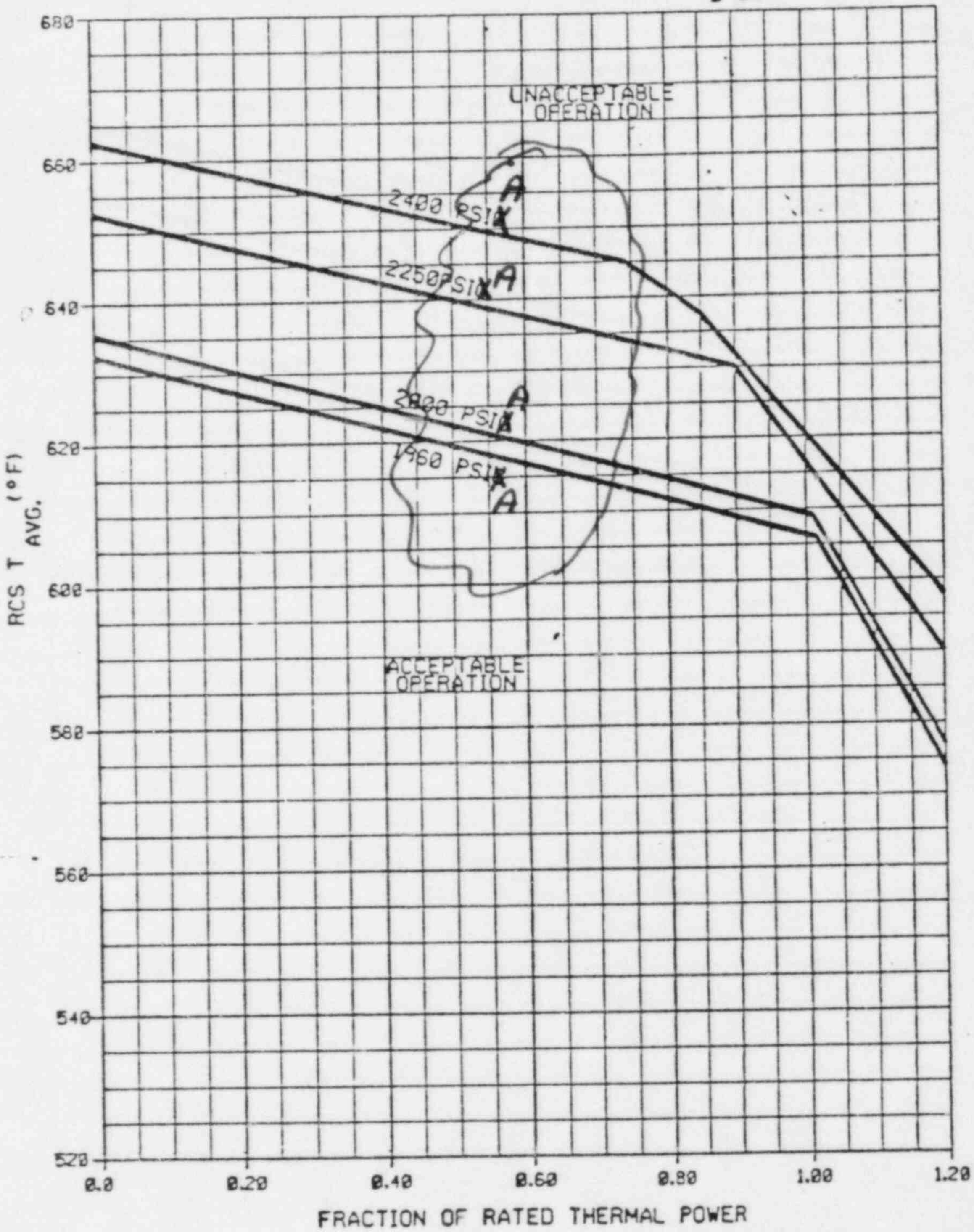

FIGURE 2.1-1

REACTOR CORE SAFETY LIMIT - FOUR LOOPS IN OPERATION

TABLE 2.2-1

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
1. Manual Reactor Trip	N.A.	N.A.	N.A.	N.A.	N.A.
2. Power Range, Neutron Flux					
a. High Setpoint	7.5	4.56	0	$\leq$109% of RTP*	$\leq$111.1% of RTP*
b. Low Setpoint	8.3	4.56	0	$\leq$25% of RTP*	$\leq$27.1% of RTP*
3. Power Range, Neutron Flux, High Positive Rate	1.6	0.5	0	$\leq$5% of RTP* with a time constant $\geq$2 seconds	$\leq$6.3% of RTP* with a time constant $\geq$2 seconds
4. Power Range, Neutron Flux, High Negative Rate	1.6	0.5	0	$\leq$5% of RTP* with a time constant $\geq$2 seconds	$\leq$6.3% of RTP* with a time constant $\geq$2 seconds
5. Intermediate Range, Neutron Flux	17.0	8.41	0	$\leq$25% of RTP*	$\leq$31.1% of RTP*
6. Source Range, Neutron Flux	17.0	10.01	0	$\leq 10^5$ cps	$\leq 1.6 \times 10^5$ cps
7. Overtemperature ΔT	6.5	3.31	1.04** +0.47**	See Note 1	See Note 2
8. Overpower ΔT	4.8	1.43	0.12	See Note 3	See Note 4
9. Pressurizer Pressure - Low	3.1	0.71	1.69	$\geq$1945 psig	$\geq$1,935 psig
10. Pressurizer Pressure - High	3.1	0.71	1.69	$\leq$2385 psig	$\leq$2,395 psig

*RTP = RATED THERMAL POWER

**The sensor error for T_{avg} is 1.04 and the sensor error for Pressurizer Pressure is 0.47. "As measured" sensor errors may be used in lieu of either or both of these values, which then must be summed to determine ~~X~~ the overtemperature ΔT total channel value for S.

FINAL DRAFT X

JUN 25 1986

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FINAL DRAFT

3/4.1.1 BORATION CONTROL

SHUTDOWN MARGIN - T_{avg} GREATER THAN 200°F

LIMITING CONDITION FOR OPERATION

3.1.1.1 The SHUTDOWN MARGIN for four loop operation shall be greater than or equal to 3.8% Δk/k ~~for four loop operation~~. in Modes 1, 2, + 3 and greater than or equal to 1.3% Δk/k in Mode 4.

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

ACTION:

With the SHUTDOWN MARGIN less than ~~3.8% Δk/k,~~ the above required limit, immediately initiate and continue boration at greater than or equal to 30 gpm of a solution containing greater than or equal to 7000 ppm boron or equivalent until the required SHUTDOWN MARGIN is restored.

SURVEILLANCE REQUIREMENTS

4.1.1.1.1 The SHUTDOWN MARGIN shall be determined to be greater than or equal to ~~3.8% Δk/k~~. the above required limits;

a. Within 1 hour after detection of an inoperable control rod(s) and at least once per 12 hours thereafter while the rod(s) is inoperable. If the inoperable control rod is immovable or untrippable, the above required SHUTDOWN MARGIN shall be verified acceptable with an increased allowance for the withdrawn worth of the immovable or untrippable control rod(s);

b. When in MODE 1 or MODE 2 with k_{eff} greater than or equal to 1 at least once per 12 hours by verifying that control bank withdrawal is within the limits of Specification 3.1.3.6;

c. When in MODE 2 with k_{eff} less than 1, within 4 hours prior to achieving reactor criticality by verifying that the predicted critical control rod position is within the limits of Specification 3.1.3.6;

d. Prior to initial operation above 5% RATED THERMAL POWER after each fuel loading, by consideration of the factors of Specification 4.1.1.1.1e. below, with the control banks at the maximum insertion limit of Specification 3.1.3.6; and

*See Special Test Exceptions Specification 3.10.1.

FINAL DRAFT

SHUTDOWN MARGIN - T_{avg} LESS THAN OR EQUAL TO 200°F

LIMITING CONDITION FOR OPERATION

3.1.1.2 The SHUTDOWN MARGIN shall be greater than or equal to 1.2% $\Delta k/k$. Additionally, the Reactor Coolant System boron concentration shall be greater than or equal to 2000 ppm boron when the reactor coolant loops are in a drained condition.

APPLICABILITY: MODE 5.

ACTION:

With the SHUTDOWN MARGIN less than 1.2% $\Delta k/k$ or the Reactor Coolant System boron concentration less than 2000 ppm boron, immediately initiate and continue boration at greater than or equal to 30 gpm of a solution containing greater than or equal to 7000 ppm boron or equivalent until the required SHUTDOWN MARGIN and boron concentration are restored. X

SURVEILLANCE REQUIREMENTS

4.1.1.2 The SHUTDOWN MARGIN and boron concentration shall be determined to be greater than or equal to 1.2% $\Delta k/k$: X

a. Within 1 hour after detection of an inoperable control rod(s) and at least once per 12 hours thereafter while the rod(s) is inoperable. If the inoperable control rod is immovable or untrippable, the SHUTDOWN MARGIN shall be verified acceptable with an increased allowance for the withdrawn worth of the immovable or untrippable control rod(s); and

b. At least once per 24 hours by consideration of the following factors:

1) Reactor Coolant System boron concentration,

2) Control rod position,

3) Reactor Coolant System average temperature,

4) Fuel burnup based on gross thermal energy generation,

5) Xenon concentration, and

6) Samarium concentration.

JUN 2 5 1986

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION FOR PLANT OPERATIONS

FUNCTIONAL UNIT	CHANNELS TO TRIP/ALARM	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	ACTION
1. Containment					
a. Containment - Post LOCA - ~~High~~ Area Monitor	1	2	All	≤ 10 R/h	27
b. RCS Leakage Detection					
1) Particulate Radioactivity	N.A.	1	1, 2, 3, 4	N.A.	26
2) Gaseous Radioactivity	N.A.	1	1, 2, 3, 4	N.A.	26
2. Containment Ventilation Isolation					
a. On Line Purge Monitor	1	2	1, 2, 3, 4	*	23
b. Manipulator Crane Area Monitor	1	2	5, 6	**	23
3. Main Steam Line	1/steam line	1/steam line	1, 2, 3, 4	N.A.	27
4. Fuel Storage Pool Areas					
a. Fuel Storage Building Exhaust Monitor	N.A.	1	***	****	25
5. Control Room Isolation					
a. Air Intake-Radiation Level					
1) East Air Intake	1/intake	2/intake	All	****	24
2) West Air Intake	1/intake	2/intake	All	****	24
6. Primary Component Cooling Water					
a. Loop A	1	1	All	< 2 x Background	28
b. Loop B	1	1	All	< 2 x Background	28

TABLE NOTATIONS

* Two times background; purge rate will be verified to ensure compliance with Specification 3.11.2.1 requirements.

** Two times background or 15 mR/hr, whichever is greater.

*** With irradiated fuel in the fuel storage pool areas.

**** Two times background or 100 CPM, whichever is greater.

FINAL DRAFT

FINAL DRAFT

SEISMIC INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.3 The seismic monitoring instrumentation shown in Table 3.3-7 shall be OPERABLE.

APPLICABILITY: At all times.

ACTION:

a. With one or more of the above required seismic monitoring instruments inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.8.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the instrument(s) to OPERABLE status.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.3.1 Each of the above required seismic monitoring instruments shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION, and ANALOG CHANNEL OPERATIONAL TEST at the frequencies shown in Table 4.3-4.

4.3.3.3.2 Each of the above required seismic monitoring instruments actuated during a seismic event greater than or equal to 0.01 g shall be restored to OPERABLE status within 24 hours and a CHANNEL CALIBRATION performed within 30 days following the seismic event. Data shall be retrieved from actuated instruments and analyzed to determine the magnitude of the vibratory ground motion. A Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.8.2 within 14 days describing the magnitude, frequency spectrum, and resultant effect upon facility features important to safety.

X

TABLE 3.3-9

REMOTE SHUTDOWN SYSTEM

TRANSFER SWITCHES/CONTROL CIRCUITS	READOUT LOCATION	~~TOTAL NO. OF CHANNELS~~	~~MINIMUM CHANNELS OPERABLE~~
18. SG D Atmospheric Relief Valve MS-PV-3004			CP-108 B
19. MS Isolation Valves MS-V-86/88/90/92			CP-108 A
20. MS Isolation Valves MS-V-86/88/90/92			CP-108 B
21. Pressurizer Heaters, Group A			CP-108 A
22. Pressurizer Heaters, Group B			CP-108 B
23. Charging Pump CS-P-2A			BUS 5 SWGR
24. Charging Pump CS-P-2B			BUS 6 SWGR
25. Charging Pump Suction from RWST CS-LCV-112D			CP-108 A
26. Charging Pump Suction from RWST CS-LCV-112E			CP-108 B
27. Pressurizer Relief Valve (PORV) RC-PCV-456A			CP-108 A
28. Pressurizer Relief Valve (PORV) RC-PCV-456B			CP-108 B
29. PORV Block Valve RC-V-122			CP-108 A
30. PORV Block Valve RC-V-124			CP-108 B
31. High Pressure Injection SI-V-138			CP-108 A
32. High Pressure Injection SI-V-139			CP-108 B
33. VCT Discharge Isolation Valve CS-LCV-112B			CP-108 A
34. VCT Discharge Isolation Valve CS-LCV-112C			CP-108 B

FINAL DRAFT

TABLE 3.3-12

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	ACTION
1. Radioactivity Monitors Providing Alarm and Automatic Termination of Release		
a. Liquid Radwaste Test Tank Discharge	1	29
b. Steam Generator Blowdown Flash Tank Drain	1*	30
c. Turbine Building Sumps Effluent Line	1	30
2. Flow Rate Measurement Devices		
a. Liquid Radwaste Test Tank Discharge	1	31
b. Steam Generator Blowdown Flash Tank Drain	1*	31
c. Circulating Water Discharge	1**	N.A.
3. Radioactivity Monitors Providing Alarm but Not Termination of Release		
a. Primary Component Cooling Water System (In lieu of service water monitors)	1	32
4. Rate of Change Monitor		
a. Primary Component Cooling Water System Head Tank (In lieu of service water monitors)	1	33

*Only applicable when steam generator blowdown is directed to the discharge transition structure.

**Pump performance curves generated in place should be used to estimate flow.

FINAL DRAFT

TABLE 3.3-13

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
1. RADIOACTIVE GAS WASTE SYSTEM EXPLOSIVE GAS MONITORING SYSTEM			
Oxygen Monitor (Process)	1	**	34
2. PLANT VENT-WIDE RANGE GAS MONITOR			
a. Noble Gas Activity Monitor	1	*	33
b. Iodine Sampler	1	*	35
c. Particulate Sampler	1	*	35
d. Flow Rate Monitor	1	*	32
e. Sampler Flow Rate Monitor	1	*	32
3. GASEOUS WASTE PROCESSING SYSTEM (Providing Alarm and Automatic Termination of Release - RM 6504)			
a. Noble Gas Activity Monitor (Process)	1	*	33

FINAL DRAFT

TABLE 3.3-13 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
3. TURBINE GLAND SEAL CONDENSER EXHAUST #			
a. Iodine Sampler	1	***	35
b. Particulate Sampler	1	***	35
c. Sampler Flow Rate Indicator	1	***	32
5. RADIOACTIVE GAS WASTE SYSTEM CUBICLES EXPLOSIVE GAS MONITORING SYSTEM			
Hydrogen Monitors	1/cubicle	**	36

FINAL DRAFT

TABLE 4.3-6

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL OPERATIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. RADIOACTIVE GAS WASTE SYSTEM EXPLOSIVE GAS MONITORING SYSTEM					
Oxygen Monitor (Process)	D	N.A.	Q(5)	M	**
2. PLANT VENT-WIDE RANGE GAS MONITOR					
a. Noble Gas Activity Monitor	D	M	R(3)	Q(2)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D	N.A.	R	Q****	*
e. Sampler Flow Rate Monitor	D	N.A.	R	Q****	*

FINAL DRAFT

TABLE 4.3-6 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL OPERATIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
3. GASEOUS WASTE PROCESSING SYSTEM (Providing Alarm and Automatic Termination of Release)					
a. Noble Gas Activity Monitor (Process)	P	N.A.	R(6)	Q(1)	*
4. TURBINE GLAND SEAL CONDENSER EXHAUST #					
a. Iodine Sampler	W	N.A.	N.A.	N.A	***
b. Particulate Sampler	W	N.A.	N.A.	N.A.	***
c. Sampler Flow Rate Indicator	D	N.A.	N.A.	N.A.	***
5. RADIOACTIVE GAS WASTE SYSTEM CUBICLE EXPLOSIVE GAS MONITORING SYSTEM					
a. Hydrogen Monitors	D	N.A.	Q(4)	M	**

JUN 25 1985

FINAL DRAFT

TABLE 4.3-6 (Continued)

TABLE NOTATIONS

* At all times.

** During RADIOACTIVE WASTE GAS SYSTEM operation.

*** When the gland seal exhauster is in operation.

**** The CHANNEL OPERATIONAL TEST for the flow rate monitor shall consist of a verification that the Radiation Data Management System (RDMS) indicated flow is consistent with the operational status of the plant.

\# Noble Gas Monitor for this release point is based on the main condenser air evacuation monitor.

(1) The DIGITAL CHANNEL OPERATIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if the instrument indicates measured levels above the Alarm/Trip Setpoint.

(2) The Digital CHANNEL OPERATIONAL TEST shall also demonstrate that control room alarm annunciation occurs if the instrument indicates measured levels above the Alarm Setpoint.

(3) The iniital CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards (NBS) or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.

(4) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

a. One volume percent hydrogen, balance nitrogen, and

b. Four volume percent hydrogen, balance nitrogen.

(5) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

a. One volume percent oxygen, balance nitrogen, and

b. Four volume percent oxygen, balance nitrogen.

All Caps

(6) The channel calibration shall be performed using sources of various activities covering the measurement range of the monitor to verify that the response is linear. Sources shall be used to verify the monitor response only for the intended energy range.

JUN 25 1986

FINAL DRAFT

REACTOR COOLANT SYSTEM

REACTOR COOLANT SYSTEM LEAKAGE

OPERATIONAL LEAKAGE

SURVEILLANCE REQUIREMENTS

4.4.6.2.1 Reactor Coolant System leakages shall be demonstrated to be within each of the above limits by:

a. Monitoring the containment atmosphere particulate radioactivity monitor at least once per 12 hours;

b. Monitoring the containment drainage sump inventory and discharge at least once per 12 hours;

c. Measurement of the CONTROLLED LEAKAGE to the reactor coolant pump seals when the Reactor Coolant System pressure is 2235 ± 20 psig at least once per 31 days with the modulating valve fully open. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or 4;

d. Performance of a Reactor Coolant System water inventory balance within 12 hours after achieving steady-state operation* and at least once per 72 hours thereafter during steady-state operation, except that not more than 96 hours shall elapse between any two successive inventory balances; and

e. Monitoring the Reactor Head Flange Leakoff System at least once per 24 hours.

~~*Changes in a throttle valve position to increase flow to an RCP shall be made only within the next 4 hours after completing this surveillance. This surveillance shall be completed within 4 hours after any change of throttle valve position.~~

*T_{avg} being changed by less than 5°F/hour

JUN 2 5 1986

Material Property Basis

Controlling Material: BaseMetal
Copper Content: Conservatively Assumed to be 0.10 wt% (Actual Content 0.06 wt%)
RT_{NDT} Initial: 40°F
RT_{NDT} After 16 EFPY: 1/4T, 110°F
3/4T, 87°F

FINAL DRAFT

Curve applicable for heatup rates up to 60°F/HR FOR THE SERVICE PERIOD up to 16 EFPY and contains margins of 10°F and 60 PSIG for possible instrument errors.

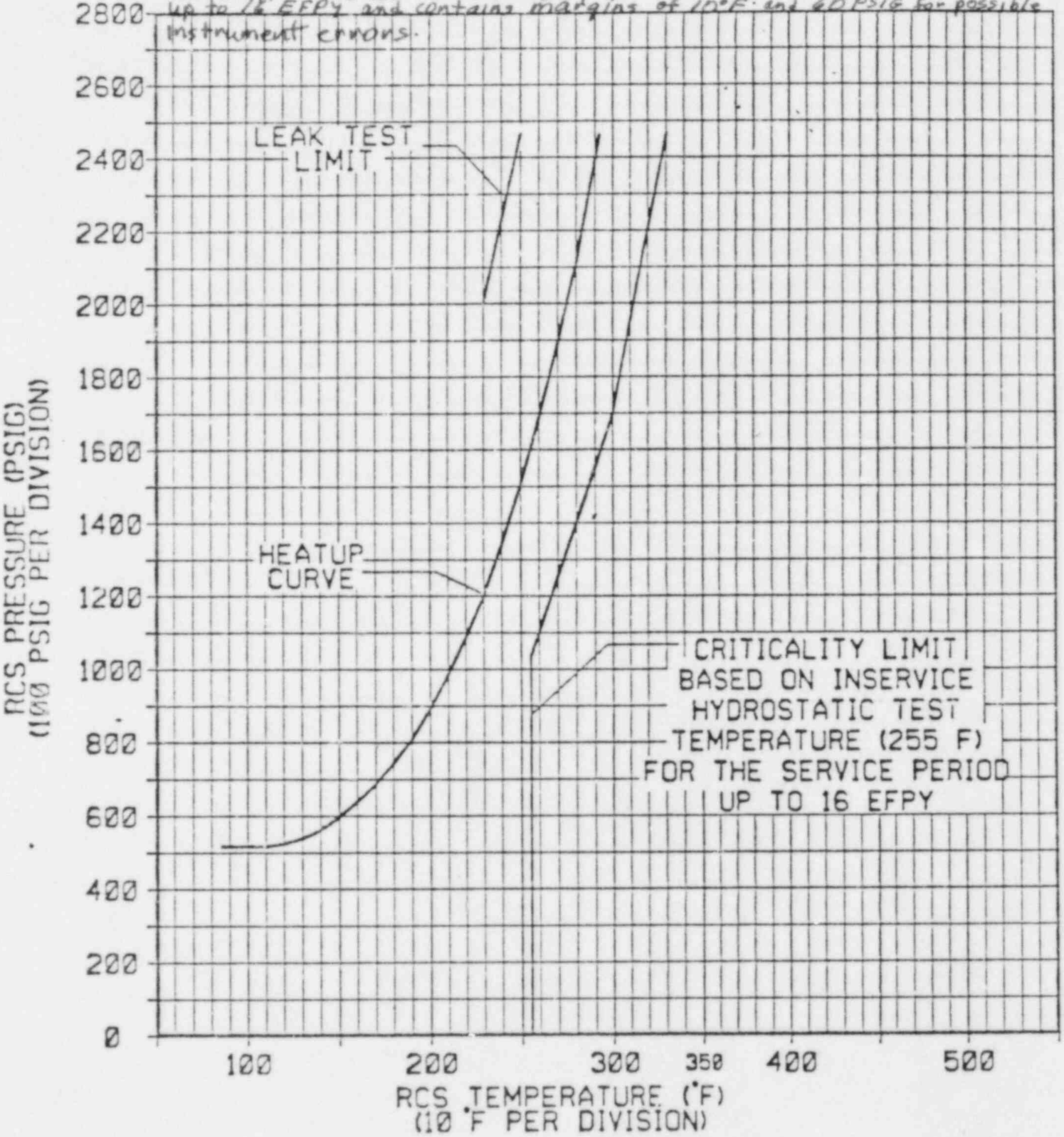

FIGURE 3.4-2

REACTOR COOLANT SYSTEM HEATUP LIMITATIONS - APPLICABLE UP TO 16 EFPY

Material Property Basis

Controlling Material: Base Metal
Copper Content: ~~0.10~~ Conservatively assumed to be 0.10 WT % (Actual Content = 0.06 wt%)
RT_{NDT}: 40°F
RT_{NDT} after 16 EFPY: 1/4T, 110°F
3/4T, 87°F

FINAL DRAFT

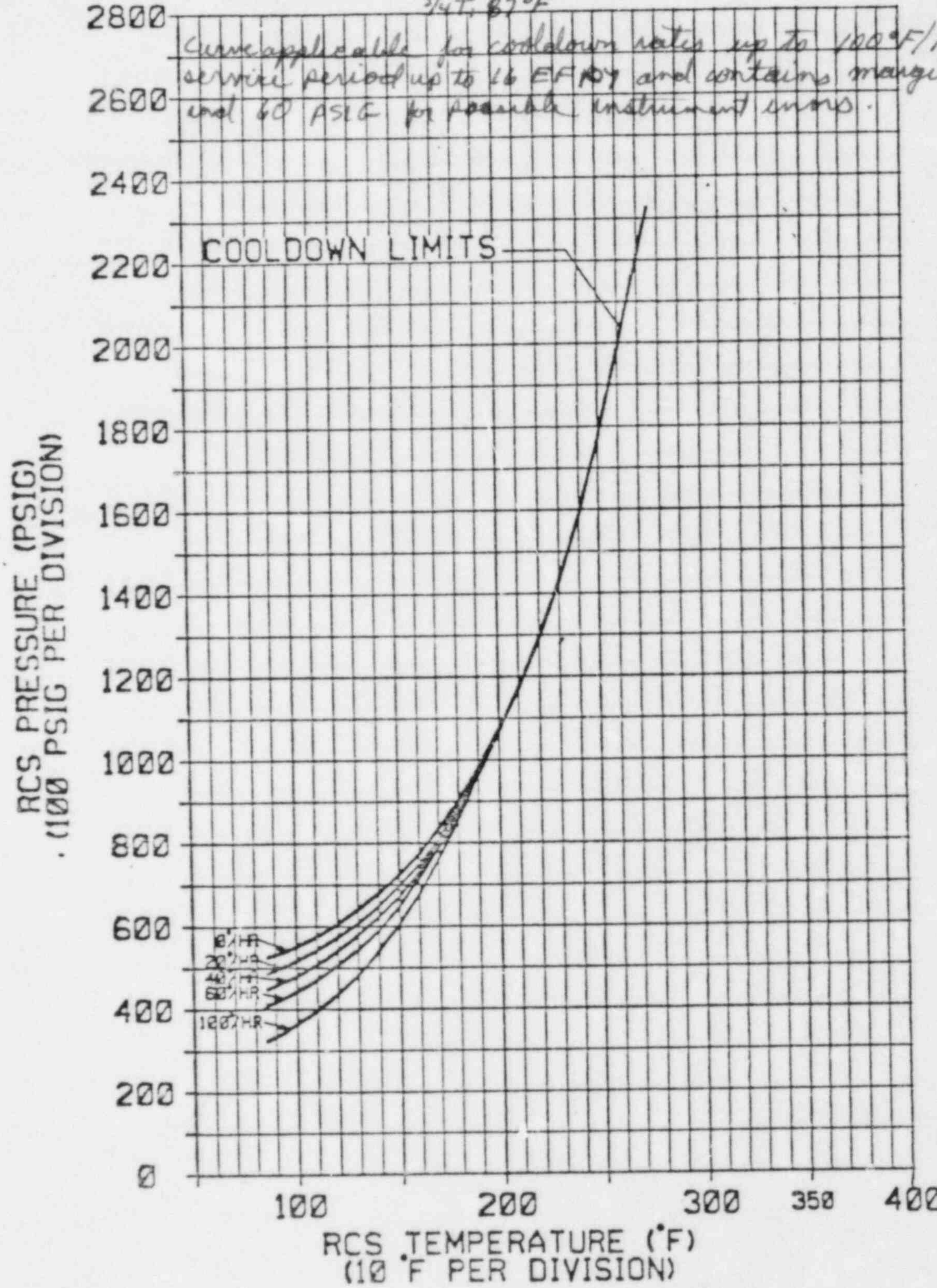

FIGURE 3.4-3

REACTOR COOLANT SYSTEM COOLDOWN LIMITATIONS - APPLICABLE UP TO 16 EFPY

JUN 2 5 1986

FINAL DRAFT

REACTOR COOLANT SYSTEM

PRESSURE/TEMPERATURE LIMITS

OVERPRESSURE PROTECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.9.3 At least one of the following Overpressure Protection Systems shall be OPERABLE:

a. Two residual heat removal (RHR) suction relief valves each with a setpoint of 450 psig. ~~± 1%, or~~

b. Two power-operated relief valves (PORVs) with lift setpoints that vary with RCS temperature which do not exceed the limit established in Figure 3.4-4, or

c. The Reactor Coolant System (RCS) depressurized with an RCS vent of greater than or equal to 1.58 square inches.

APPLICABILITY: MODE 4 when the temperature of any RCS cold leg is less than or equal to 329°F; MODE 5 and MODE 6 with the reactor vessel head on.

ACTION:

a. With one PORV and one RHR suction relief valve inoperable, either restore two PORVs or two RHR suction relief valves to OPERABLE status within 7 days or depressurize and vent the RCS through at least a 1.58-square-inch vent within the next 8 hours.

b. With both PORVs and both RHR suction relief valves inoperable, depressurize and vent the RCS through at least a 1.58-square-inch vent within 8 hours.

c. In the event the PORVs, or the RHR suction relief valves, or the RCS vent(s) are used to mitigate an RCS pressure transient, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.8.2 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the PORVs, or the RHR suction relief valves, or RCS vent(s) on the transient, and any corrective action necessary to prevent recurrence.

d. The provisions of Specification 3.0.4 are not applicable.

FINAL DRAFT

3/4.5.2 ECCS SUBSYSTEMS - T_{avg} GREATER THAN OR EQUAL TO 350°F

LIMITING CONDITION FOR OPERATION

3.5.2 Two independent Emergency Core Cooling System (ECCS) subsystems shall be OPERABLE with each subsystem comprised of:

a. One OPERABLE centrifugal charging pump,

b. One OPERABLE Safety Injection pump,

c. One OPERABLE RHR heat exchanger,

d. One OPERABLE RHR pump, and

e. An OPERABLE flow path* capable of taking suction from the refueling water storage tank on a Safety Injection signal and automatically transferring suction to the containment sump during the recirculation phase of operation.

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

ACTION:

a. With one ECCS subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.8.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date. The current value of the usage factor for each affected Safety Injection nozzle shall be provided in this Special Report whenever its value exceeds 0.70.

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*During MODE 3, the discharge paths of both Safety Injection pumps may be isolated by closing for a period of up to 2 hours to perform surveillance testing as required by Specification 4.4.6.2.2.

**The provisions of Specifications 3.0.4 and 4.0.4 are not applicable for entry into MODE 3 for the centrifugal charging pump and the Safety Injection pumps declared inoperable pursuant to Specification 4.5.3.2 provided the centrifugal changing pump and the Safety Injection pumps are restored to OPERABLE status within at least 4 hours prior to the temperature of one or more of the RCS cold legs exceeding 375°F, whichever comes first.

or

FINAL DRAFT

CONTAINMENT SYSTEMS

PRIMARY CONTAINMENT

CONTAINMENT VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.1.7 Each containment purge supply and exhaust isolation valve shall be OPERABLE and:

a. Each 36-inch containment shutdown purge supply and exhaust isolation valve shall be closed and locked closed, and

b. The 8-inch containment purge supply and exhaust isolation valve(s) shall be sealed closed except when open for purge system operation for pressure control; for ALARA, respirable, and air quality considerations to facilitate personnel entry; and for surveillance tests that require the valve(s) to be open.

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

ACTION:

a. With a 36-inch containment purge supply or exhaust isolation valve open or not locked closed, close and lock close that valve or isolate the penetration(s) within 4 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b

b. With one or more of the 8-inch containment purge supply or exhaust isolation valves open for reasons other than given in Specification 3.6.1.7.~~a~~ above, close the open 8-inch valve(s) or isolate the penetration(s) within 4 hours, otherwise be in at least HOT STANDBY within the next 6 hours, and in COLD SHUTDOWN within the following 30 hours.

c. With one or more containment purge supply or exhaust isolation valves having a measured leakage rate in excess of the limits of Specifications 4.6.1.7.2 or 4.6.1.7.3, restore the inoperable valve(s) to OPERABLE status or isolate the affected penetration(s) so that the measured leakage rate does not exceed the limits of Specifications 4.6.1.7.2 or 4.6.1.7.3 within 24 hours and close the purge supply if the affected penetration is the exhaust penetration, otherwise be in at least HOT STANDBY within the next 6 hours, and in COLD SHUTDOWN within the following 30 hours.

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*The 8-inch containment purge supply and exhaust isolation valves may not be opened while in MODE 1 or MODE 2 until installations of the narrow-range containment pressure instrument channels and alarms are completed.

JUN 0 5 1986

FINAL DRAFT

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 each locked closed 36-inch containment purge supply and exhaust isolation valve with resiliant seals 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.~~[illegible]~~ b at least once per 31 days.

FINAL DRAFT

CONTAINMENT ENCLOSURE BUILDING

CONTAINMENT ENCLOSURE EMERGENCY AIR CLEANUP SYSTEM ~~BUILDING INTEGRITY~~

SURVEILLANCE REQUIREMENTS

4.6.5.1 (Continued)

f. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the cleanup system satisfies the in-place penetration leakage testing acceptance criteria of less than 0.05% in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 2100 cfm ± 10%.

FINAL DRAFT

SURVEILLANCE REQUIREMENTS

4.7.1.2.2 Auxiliary feedwater flow paths to each steam generator shall be demonstrated OPERABLE following each COLD SHUTDOWN of greater than 30 days, or after maintenance on an auxiliary feedwater pump that could have an effect upon pump performance, prior to entering MODE 2 by verifying ~~design~~ normal flow to each steam generator from:

a. Each emergency feedwater pump, and

b. The startup feedwater pump via the main feedwater flow path and via the emergency feedwater header.

X

PLANT SYSTEMS

TURBINE CYCLE

ATMOSPHERIC RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.6 ~~The~~ At least three atmospheric relief valves shall be OPERABLE.

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

ACTION:

With less than ~~one~~ one the required atmospheric relief valves ~~per steam generator~~ OPERABLE, restore the required atmospheric relief valves to OPERABLE status within 72 hours; or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.6 ~~Each~~ An atmospheric relief valve shall be demonstrated OPERABLE:

a. At least once per 24 hours by verifying that the nitrogen accumulator tank is at a pressure greater than or equal to 500 psig.

b. Prior to startup following any refueling shutdown or cold shutdown of 30 days or longer, verify that ~~all~~ the valve~~s~~ will open and close fully.

*When steam generators are being used for decay heat removal.

FINAL DRAFT

3/4.7.6 CONTROL ROOM AREA VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.6 Two independent Control Room Area Ventilation Systems shall be OPERABLE.

APPLICABILITY: All MODES.

ACTION:

MODES 1, 2, 3, and 4:

With one Control Room Area Ventilation System inoperable, restore the inoperable system 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.

MODES 5 and 6:

a. With one Control Room Area Ventilation System inoperable, restore the inoperable system to OPERABLE status within 7 days or initiate and maintain operation of the remaining OPERABLE Control Room Area Ventilation System in the recirculation mode.

b. With both Control Room Area Ventilation Systems inoperable, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.

SURVEILLANCE REQUIREMENTS

4.7.6 Each Control Room Area Ventilation System shall be demonstrated OPERABLE:

a. At least once per 12 hours by verifying that the Control Room Area Ventilation System is maintaining the temperature of equipment and instrumentation in the control room area below its limiting equipment qualification temperature.

b. At least once per 18 months or after any significant modification to the Control Room Area Ventilation Systems by verifying a system flow rate of 25,700 cfm ± 10% through the air conditioner unit (3A and 3B) and a flow rate of at least ~~500~~ 1200 cfm ±10% makeup from each intake to the emergency filtration unit with a discharge of ~~2000~~ 2200 cfm ± 10% from the filtration unit.

JUN 25 1986

FINAL DRAFT

CONTROL ROOM AREA VENTILATION SYSTEM

SURVEILLANCE REQUIREMENTS

4.7.6 (Continued)

c. At least once per 18 months by:

1) Verifying that on a high radiation signal from the control room makeup air intake, the subsystem automatically switches to the emergency recirculation mode of operation and the isolation dampers close within 5 seconds.

2) Verifying that on an S signal the emergency filtration fans start.

3) Verifying that the system maintains the control room area at a positive pressure of greater than or equal to a pressurization 1/8-inch Water Gauge relative to adjacent areas during system operation at ~~less than or equal to a pressurization flow of 650~~ cfm. ± 10%.
1200

JUN 25 1986

FINAL DRAFT

SURVEILLANCE REQUIREMENTS

4.8.1.1.2 (Continued)

13) Verifying that the following diesel generator lockout features prevent diesel generator starting:

    a) Barring device engaged, or

    b) Differential lockout relay.

fan(s)

14) Simulating a Tower Actuation (TA) signal while the diesel generator is loaded with the permanently connected loads and auto-connected emergency (accident) loads, and verifying that the service water pump automatically trips, the cooling tower pump and [illegible] automatically starts. After energization the steady state voltage and frequency of the emergency buses shall be maintained at 4160 ± 420 volts and 60 ± 1.2 Hz; and

15) While diesel generator 1A is loaded with the permanently connected loads and auto-connected emergency (accident) loads, manually connect the 1500 hp startup feedwater pump to 4160-volt bus E5. After energization the steady-state voltage and frequency of the emergency bus shall be maintained at 4160 ± 420 volts and 60 ± 1.2 Hz.

g. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 514 rpm in less than or equal to 10 seconds; and

h. At least once per 10 years by:

    1) Draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite solution, or equivalent, and

    2) Performing a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code at a test pressure equal to 110% of the system design pressure.

FINAL DRAFT

3/4.8.2 D.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.1 As a minimum, the following D.C. electrical sources shall be OPERABLE and energized:

a. Train A

1) 125-volt Battery Banks 1A and 1C,
2) One full-capacity battery charger on Bus #11A, and
3) One full-capacity battery charger on Bus #11C.

b. Train B

1) 125-volt Battery Banks 1B and 1D,
2) One full-capacity battery charger on Bus #11B, and
3) One full-capacity battery charger on Bus #11D.

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

ACTION:

a. With one of the required battery banks in one train inoperable, close the bus tie to connect the remaining operable battery bank to the D.C. bus supplied by the inoperable battery bank within 2 hours; restore the inoperable battery bank to OPERABLE status within 30 days* ~~or~~ be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one of the full-capacity chargers inoperable, ~~demonstrate the operability of its associated battery bank by performing Surveillance Requirement 4.8.2.1.a.1) within 1 hour, and at least once per hour thereafter. If any Category A limit in Table 4.8-2 is not met, declare the battery inoperable.~~ restore the inoperable charger to OPERABLE status within 2 hour or be in HOT STANDBY within 6 hours and COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.1 Each 125-volt battery bank and charger shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying that:

1) The parameters in Table 4.8-2 meet the Category A limits, and
2) The total battery terminal voltage is greater than or equal to 128 volts on float charge.

b. At least once per 92 days and within 7 days after a battery discharge with battery terminal voltage below 110 volts, or battery overcharge with battery terminal voltage above 150 volts, by verifying that:

*No more than one battery at a time may be taken out of service for more than 30 days.

JUN 25 1986

FINAL DRAFT

FUEL STORAGE BUILDING EMERGENCY AIR CLEANING SYSTEM

SURVEILLANCE REQUIREMENTS

4.9.12b (Continued)

1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978,* and the system flow rate is 17,000 cfm ± 10%;

2) Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978,* meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, by showing a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and at a relative humidity of ~~70~~% 95 in accordance with ASTM-D3803; and

3) Verifying a system flow rate of 17,000 cfm ± 12% during system operation when tested in accordance with ANSI N510-1980.

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 in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978,* meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978,* by showing a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and at a relative humidity of 95% in accordance with ASTM-D3803.

d. At least once per 18 months by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the system at a flow rate of 17,000 cfm ± 10%,

2) Verifying that the system maintains the spent fuel storage pool area at a negative pressure of greater than or equal to 1/4 inch Water Gauge relative to the outside atmosphere during system operation,

*ANSI N510-1980 shall be used in place of ANSI N510-1975 as referenced in Regulatory Guide 1.52, Rev. 2, March 1978.

JUN 2 5 198

FINAL DRAFT

BASES

3/4.2.5 DNB PARAMETERS

The limits on the DNB-related parameters assure that each of the parameters is maintained within the normal steady-state envelope of operation assumed in the transient and accident analyses. The limits are consistent with the initial FSAR assumptions and have been analytically demonstrated adequate to maintain a minimum DNBR of 1.30 throughout each analyzed transient. ~~The indicated values of T_{avg} and pressurizer pressure are set with allowances for measurement uncertainties~~ so that the limits of 594.3°F for T_{avg} and 2205 psig for pressurizer are not exceeded.

The measurement error of 2.1% for RCS total flow rate is based upon performing a precision heat balance and using the result to normalize the RCS flow rate indicators. Potential fouling of the feedwater venturi which might not be detected could bias the result from the precision heat balance in a nonconservative manner. Therefore, a penalty of 0.1% for undetected fouling of the feedwater venturi is applied. Any fouling which might bias the RCS flow rate measurement greater than 0.1% can be detected by monitoring and trending various plant performance parameters. If detected, action shall be taken before performing subsequent precision heat balance measurements, i.e., either the effect of the fouling shall be quantified and compensated for in the RCS flow rate measurement or the venturi shall be cleaned to eliminate the fouling.

The 12-hour periodic surveillance of these parameters through instrument readout is sufficient to ensure that the parameters are restored within their limits following load changes and other expected transient operation.

The periodic surveillance of indicated RCS flow is sufficient to detect only flow degradation which could lead to operation outside the specified limit.

Operating procedures include allowances for measurement and indication uncertainty

FINAL DRAFT

BASES

TURBINE CYCLE

3/4.7.1.2 AUXILIARY FEEDWATER SYSTEM

The OPERABILITY of the Auxiliary Feedwater System ensures that the Reactor Coolant System can be cooled down to less than 350°F from normal operating conditions in the event of a total loss-of-offsite power.

The electric motor-driven emergency feedwater pump is capable of delivering a total feedwater flow of 650 gpm at a pressure of 1185 psig to the entrance of the steam generators. The steam-driven emergency feedwater pump is capable of delivering a total feedwater flow of 650 gpm at a pressure of 1221 ~~1468~~ psig to the entrance of the steam generators. The startup feedwater pump serves as the third auxiliary feedwater pump and can be manually aligned to be powered from an emergency bus (Bus 5). The startup feedwater pump is capable of taking suction on the dedicated emergency feedwater volume of water in the condensate storage tank and delivering a total feedwater flow of in excess of 650 gpm at a pressure of 1185 psia to the entrance of the steam generator via either the main feedwater header or with manual alignment to the emergency feedwater flow path. This capacity is sufficient to ensure that adequate feedwater flow is available to remove decay heat and reduce the Reactor Coolant System temperature to less than 350°F when the Residual Heat Removal System may be placed into operation.

3/4.7.1.3 CONDENSATE STORAGE TANK

The OPERABILITY of the condensate storage tank with the minimum water volume ensures that sufficient water is available to cool the RCS to a temperature of 350°F. The OPERABILITY of the concrete enclosure ensures this availability of water following rupture of the condensate storage tank by a tornado generated missile. The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics.

3/4.7.1.4 SPECIFIC ACTIVITY

The limitations on Secondary Coolant System specific activity ensure that the resultant offsite radiation dose will be limited to a small fraction of 10 CFR Part 100 dose guideline values in the event of a steam line rupture. This dose also includes the effects of a coincident 1 gpm reactor-to-secondary tube leak in the steam generator of the affected steam line. These values are consistent with the assumptions used in the safety analyses.

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES

The OPERABILITY of the main steam line isolation valves ensures that no more than one steam generator will blow down in the event of a steam line rupture. This restriction is required to: (1) minimize the positive reactivity effects of the Reactor Coolant System cooldown associated with the blowdown, and (2) limit the pressure rise within containment in the event the steam line rupture occurs within containment. The OPERABILITY of the main steam isolation valves within the closure times of the Surveillance Requirements are consistent with the assumptions used in the safety analyses.

JUN 25 1986

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure-induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations of 70°F and 200 psig are based on a steam generator RT_{NDT} of 60°F and are sufficient to prevent brittle fracture.

3/4.7.3 PRIMARY COMPONENT COOLING WATER SYSTEM

The OPERABILITY of the Primary Component Cooling Water System ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

3/4.7.4 SERVICE WATER SYSTEM

The Service Water System consists of two independent loops, each of which can operate with either a service water pump train or a cooling tower pump train. The OPERABILITY of the Service Water System ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses, which also assumes loss of either the cooling tower or ocean cooling.

3/4.7.5 ULTIMATE HEAT SINK

The limitations on service water pump house level, and the OPERABILITY requirements for the mechanical draft cooling tower and the portable tower makeup pump system, ensure that sufficient cooling capacity is available to either: (1) provide normal cooldown of the facility or (2) mitigate the effects of accident conditions within acceptable limits. This cooling capability is provided by the Atlantic Ocean except during loss of ocean tunnel water flow, when the cooling capability is provided by the mechanical draft cooling tower with tower makeup using portable pumps.

The limitations on minimum water level and the requirements for mechanical draft cooling tower OPERABILITY are based on providing a 30-day cooling water supply to safety-related equipment without exceeding its design basis temperature and is consistent with the recommendations of Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Plants," March 1974.

3/4.7.6 CONTROL ROOM AREA VENTILATION SYSTEM

The OPERABILITY of the Control Room Area Ventilation System ensures that: (1) the allowable temperature for continuous-duty rating for the equipment and


HAMPTON FALLS
SEABROOK
MOBILE HOME PARK
TRANSMISSION LINE EASEMENT
NORTH ACCESS ROAD
ROCKINGHAM FIREWORKS CO.
GATEHOUSE
SECURITY FENCE
PUBLIC EDUCATION CENTER (PUBLIC ACCESS)
SOUTH ACCESS ROAD
SCALE (FEET)
1000

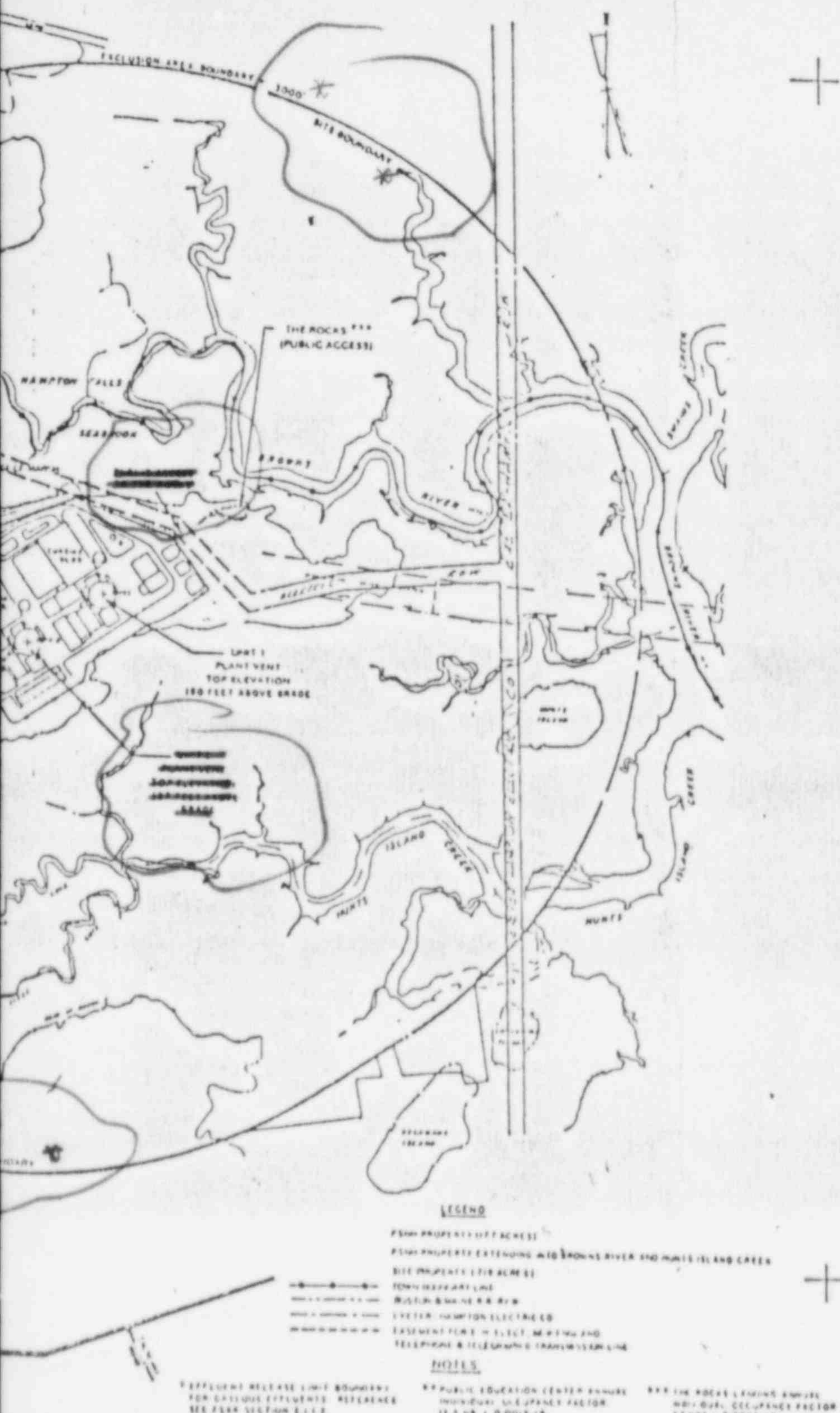


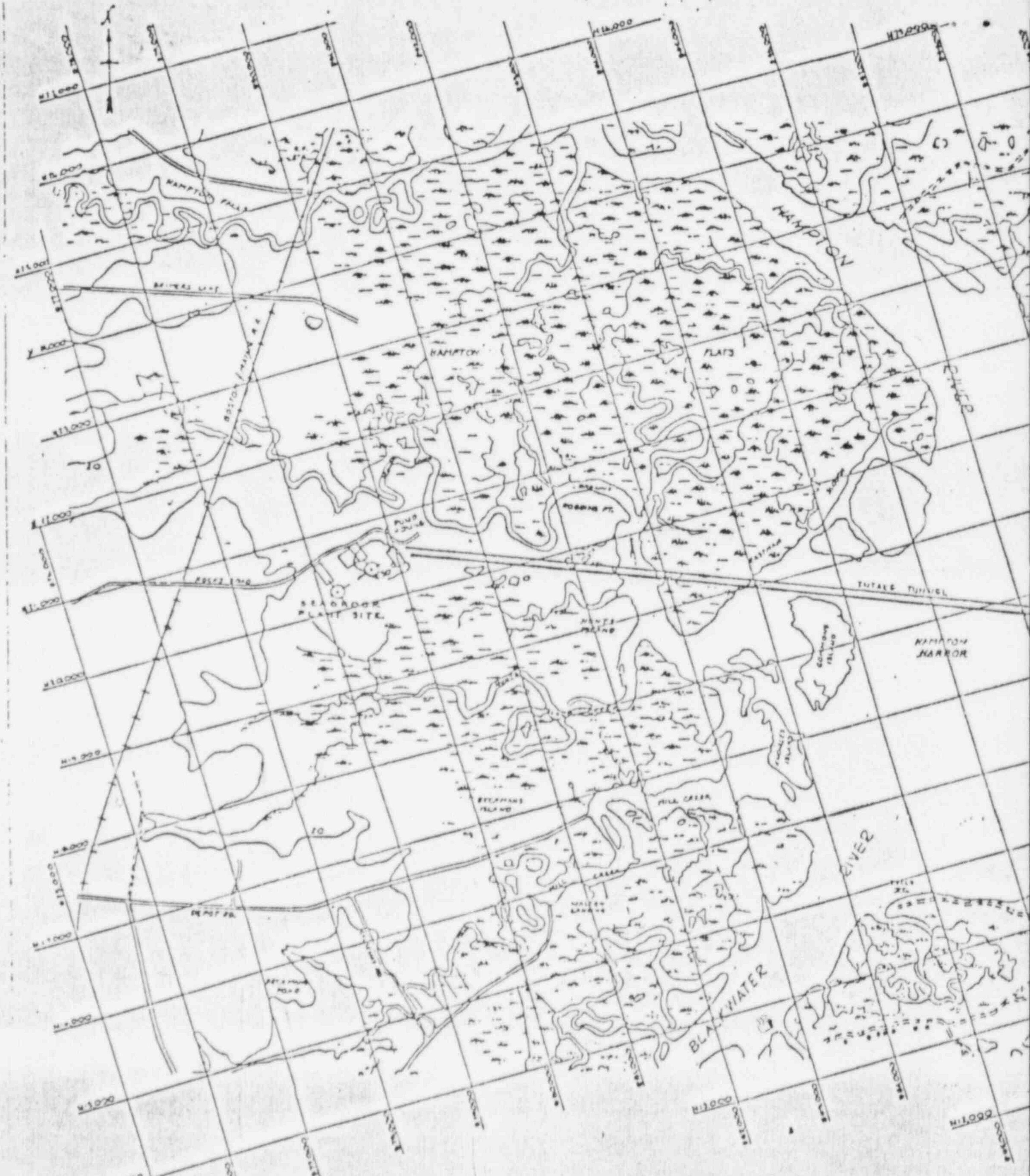
FIGURE 5.1-1

SITE AND EXCLUSION AREA BOUNDARY

TI
APERTURE
CARD

Also Available On
Aperture Card

8607170248-01



HAMPTON
HAMPTON
FLATS
HAMPTON RIVER
SEABROOK
PLANT SITE
INTAKE TUNNEL
HAMPTON
HARBOR
MILL CREEK
RIVER
BLACKWATER

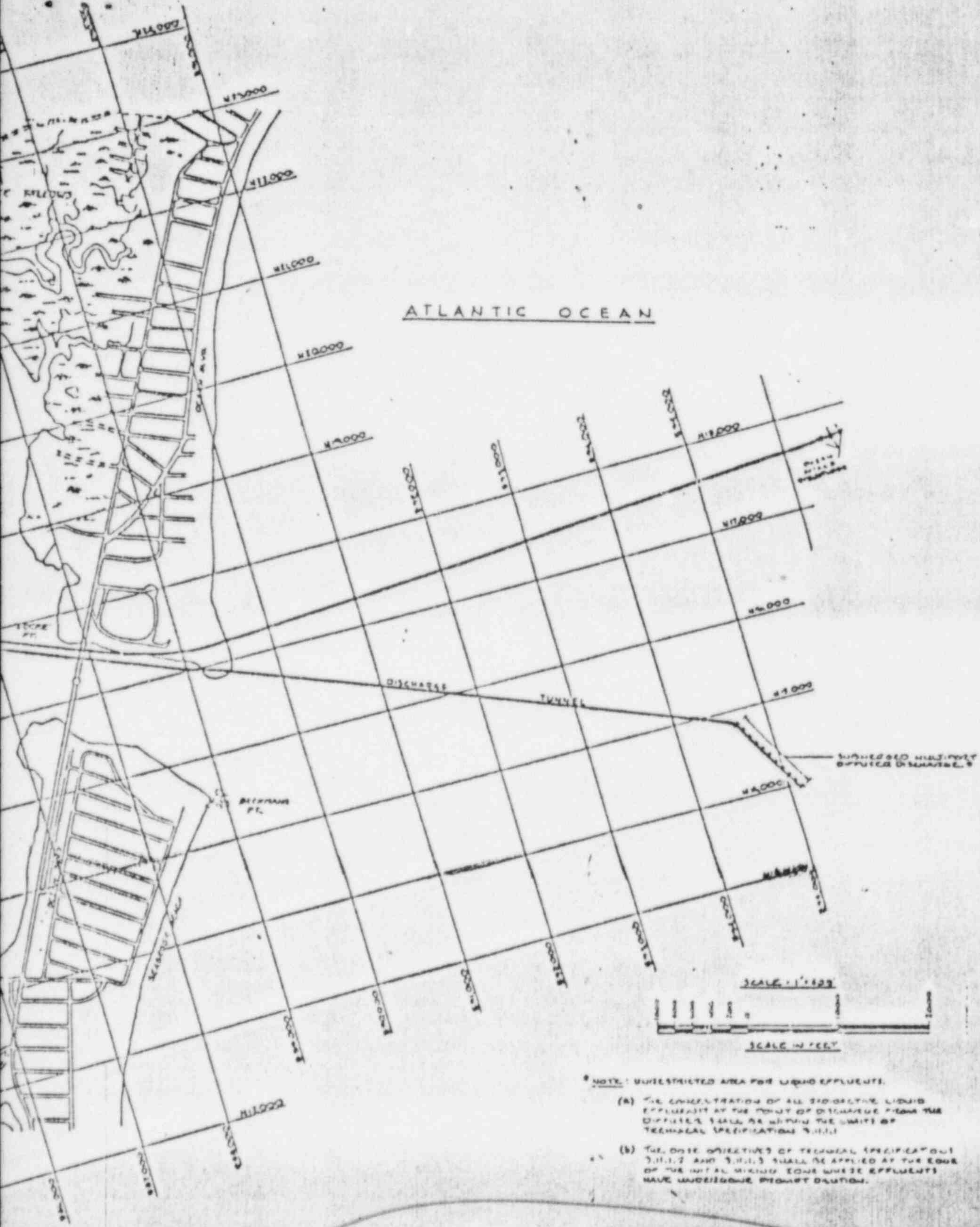


FIGURE 5.1-3

~~SITE BOUNDARY FOR LIQUID AND GASEOUS EFFLUENTS~~
LIQUID EFFLUENT DISCHARGE LOCATION

RECORD RETENTION

6.9.3 (Continued)

f. Records of reactor tests and experiments;

g. Records of training and qualification for current members of the station staff;

h. Records of inservice inspections performed pursuant to these Technical Specifications;

i. Records of quality assurance activities required by the Operational Quality Assurance Manual;

j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59;

k. Records of meetings of the SORC and the NSARC;

l. Records of the service lives of all hydraulic and mechanical snubbers required by Specification 3.7.~~8~~ 7, including the date at which the service life commences and associated installation and maintenance records;

m. Records of secondary water sampling and water quality; and

n. Records of analyses required by the Radiological Environmental Monitoring Program that would permit evaluation of the accuracy of the analysis at a later date. This should include procedures effective at specified times and QA records showing that these procedures were followed.

6.10 RADIATION PROTECTION PROGRAM

6.10.1 Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained, and adhered to for all operations involving personnel radiation exposure.

6.11 HIGH RADIATION AREA

6.11.1 Pursuant to paragraph 20.203(c)(5) of 10 CFR Part 20, in lieu of the "control device" or "alarm signal" required by paragraph 20.203(c), each high radiation area, as defined in 10 CFR Part 20, in which the intensity of radiation is equal to or less than 1000 mR/h at 45 cm (18 in.) from the radiation source or from any surface that the radiation penetrates shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP). Individuals qualified in radiation protection procedures (e.g., Health Physics Technician) or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates equal to or less than 1000 mR/h, provided they are otherwise following plant radiation protection procedures for entry into such high