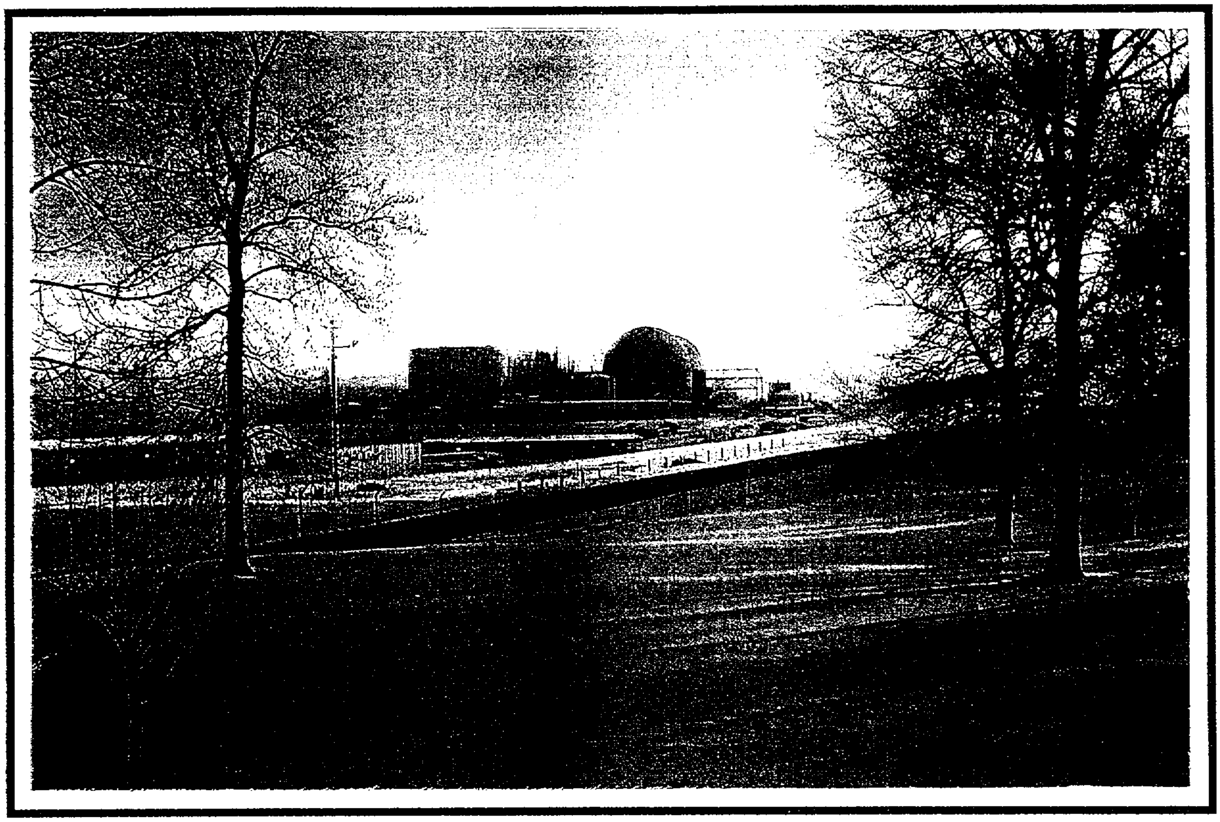
NORTH ANNA POWER STATION

Unit 1 CTS
Mark-Ups



VOLUME 2

Improved Technical Specifications

Dominion

A.1

1.0 USE AND APPLICATION

5-5-83

ITS Section 1.1

1.1 DEFINITIONS

NOTE: The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications ~~.~~ and Bases A.1

ACTION

1.1 ACTION shall be that part of a Specification which prescribes ~~remedial measures required~~ Required Actions to be taken under designated conditions ~~.~~ within specified Completion Times A.1

Add proposed definition of Actuation Logic Test A.2

AXIAL FLUX DIFFERENCE

AFD

1.2 AXIAL FLUX DIFFERENCE shall be the difference in normalized flux signals, ~~expressed in % of RATED THERMAL POWER~~ between the top and bottom halves of a two section excore neutron detector. A.1

CHANNEL CALIBRATION

1.3 A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass ~~the entire channel including the sensor and alarm and/or trip functions, and shall include the CHANNEL FUNCTIONAL TEST.~~ all devices in the channel required for channel OPERABILITY. The CHANNEL CALIBRATION may be performed by any series of sequential, overlapping or total channel steps ~~such that the entire channel is calibrated~~. Insert 1 A.12

CHANNEL CHECK

1.4 A CHANNEL CHECK shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and ~~/or~~ status with other indications ~~and~~/or status derived from independent instrumentation channels measuring the same parameter. A.1

or actual L.1

CHANNEL ~~FUNCTIONAL~~ OPERATIONAL TEST (COT)

1.5 A ~~CHANNEL FUNCTIONAL TEST~~ COT shall be ~~:~~ A.1

~~a. Analog channels -~~ the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY ~~including alarm and/or trip functions~~ Insert 2 of all devices in the channel required for channel OPERABILITY. A.11

~~b. Bistable channels - the injection of a simulated signal into the sensor to verify OPERABILITY including alarm and/or trip functions.~~ A.4

~~CONTAINMENT INTEGRITY~~

~~1.6 CONTAINMENT INTEGRITY shall exist when:~~

~~1.6.1 All penetrations required to be closed during accident conditions are either:~~ A.8

A.11

A.1

ITS Chapter 1.0

ITS Section 1.1

1.1 DEFINITIONS (Continued)

a. Capable of being closed by an OPERABLE containment automatic isolation valve system, or

b. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administrative control as permitted by Specification 3.6.3.1.

1.6.2 All equipment hatches are closed and sealed.

1.6.3 Each air lock is OPERABLE pursuant to Specification 3.6.1.3.

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

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

A.8

CONTROLLED LEAKAGE

1.7 CONTROLLED LEAKAGE shall be that seal water flow supplied to the reactor coolant pump seals.

A.9

fuel, sources, or reactivity control components

L.2

CORE ALTERATION

1.8 CORE ALTERATION shall be the movement ~~or manipulation~~ of any component within the reactor pressure vessel with the vessel head removed and fuel in the vessel. suspension of CORE ALTERATION shall not preclude completion of movement of a component to a safe conservative position.

A.5

CORE OPERATING LIMITS REPORT (COLR)

parameter

1.9 The CORE OPERATING LIMITS REPORT is the unit-specific document that provides core operating limits for the current operating reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Specification 6.9.1.7 5.6.5 Plant operation within these operating limits is addressed in individual specifications.

Cycle specific parameter

A.1

DOSE EQUIVALENT I-131

1.10 The DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134 and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table III of TID-14844, AEC, 1962, "Calculation of Distance Factors for Power and Test Reactor Sites".

A.1

$\bar{E}$-AVERAGE DISINTEGRATION ENERGY

1.11 $\bar{E}$ shall be the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

ITS Chapter 1.0

A.1

ITS Section 1.1

1.0 DEFINITIONS (Continued)

A.1

ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME

1.12 The ENGINEERED SAFETY FEATURE RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include emergency diesel generator starting and sequence loading delays where applicable. Insert 1 Insert 2 L.4 A.10

~~FREQUENCY NOTATION~~

~~1.13 The FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.2.~~ A.6

~~FULLY WITHDRAWN~~

~~1.13a The control bank FULLY WITHDRAWN position shall be within the interval of 225 to 229 steps withdrawn, inclusive. Definition of the FULLY WITHDRAWN position for each specific cycle shall be documented in the rod insertion limit operator curve.~~ A.7

~~GASEOUS RADWASTE TREATMENT SYSTEM~~

~~1.14 A GASEOUS RADWASTE TREATMENT SYSTEM is the system designed and installed to reduce radioactive gaseous effluents by collecting primary coolant system offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment. The system is composed of the waste gas decay tanks, regenerative heat exchanger, waste gas charcoal filters, process vent blowers, waste gas surge tanks and waste gas diaphragm compressor.~~ A.8

~~IDENTIFIED~~ LEAKAGE

1.15 IDENTIFIED LEAKAGE shall be:

a. Leakage (except CONTROLLED LEAKAGE) ~~into closed systems~~, such as pump seal or valve packing leaks that ~~are captured and conducted to~~ Collection systems or a sump or collecting tank, or

(except reactor coolant pump (RCP) seal water injection or leakoff)

b. Leakage into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be PRESSURE BOUNDARY LEAKAGE, or

c. Reactor coolant system leakage through a steam generator to the secondary system.

A.9

~~MEMBER(S) OF THE PUBLIC~~

~~1.16 MEMBER(S) OF THE PUBLIC shall include all individuals who by virtue of their occupational status have no formal association with the plant. This category shall include non-employees of the licensee who are permitted to use portions of the site for recreational, occupational, or other purposes not associated with plant functions. This category shall not include non-employees such as vending machine servicemen or postmen who, as part of their formal job function, occasionally enter an area that is controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials.~~ A.8

Insert Unidentified Leakage from page 9 of 11
Insert Pressure Boundary Leakage from page 6 of 11 A.9

Rev. 0

1.0 ① DEFINITIONS (Continued)

ITS Section 1.1

OFFSITE DOSE CALCULATION MANUAL (ODCM)

1.17 The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm/trip setpoints, and in the conduct of the Environmental Radiological Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Section 6.8.4 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Annual Radioactive Effluent Release Reports required by Specifications 6.9.1.8 and 6.9.1.9. (See Chapter 5.0)

Add proposed definition of Master Relay Test — A.2

OPERABLE - OPERABILITY

1.18 A system, subsystem, train, component or device (Safety — A.13) shall be OPERABLE or have OPERABILITY when it is capable of performing its specified (Safety) function(s), and when all necessary attendant instrumentation, controls, normal ~~and~~ or emergency electrical power ~~sources~~, cooling ~~or~~ and seal water, lubrication ~~or~~ and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its (Specified Safety — A.13) function(s) are also capable of performing their related support function(s). — A.1, L.3

~~OPERATIONAL MODE~~ - MODE

1.19 ~~An OPERATIONAL~~ MODE ~~(i.e., MODE)~~ shall correspond to any one inclusive combination of core reactivity condition, power level, ~~and~~ average reactor coolant temperature, specified in Table 1.1 (with fuel in the reactor vessel) (Moved from Table 1.1) (, and reactor vessel head closure bolt tensioning — A.14). — A.1

PHYSICS TESTS

1.20 PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation and 1) described in Chapter 14.0 of the (Initial Tests and Operation) FSAR, 2) authorized under the provisions of 10 CFR 50.59, or 3) otherwise approved by the (Nuclear Regulatory) Commission. — A.1

PRESSURE BOUNDARY LEAKAGE

1.21 PRESSURE BOUNDARY LEAKAGE shall be leakage (except steam generator tube leakage) through a non-isolable fault in a Reactor Coolant System component body, pipe wall or vessel wall.

(Moved to LEAKAGE on page 4 of 11)

PROCESS CONTROL PROGRAM

1.22 The PROCESS CONTROL PROGRAM (PCP) shall contain the current formulas, sampling, analyses, tests and determinations to be made to ensure that the processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of the radioactive waste.

(See Chapter 5.0)

~~PURGE - PURGING~~

~~1.23 PURGE or PURGING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is required to purify the confinement.~~ — A.8

(A.1) ITS 5.0

2-17-94

ITS

OFFSITE DOSE CALCULATION MANUAL (ODCM)

5.5.1.a 1.17 The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm/trip setpoints, and

5.5.1.b in the conduct of the Environmental Radiological Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring activities ~~Programs required by Section 6.8.4~~ and (2) descriptions of the information that should be ~~included in the~~ Annual Radiological Environmental Operating and Annual Radioactive Effluent Release Reports required by Specifications ~~6.9.1.8~~ 5.6.2 and ~~6.9.1.9~~ 5.6.3. (A.20)

OPERABLE - OPERABILITY

1.18 A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s), and when all necessary attendant instrumentation, controls, normal and emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its function(s) are also capable of performing their related support function(s).

OPERATIONAL MODE - MODE

1.19 An OPERATIONAL MODE (i.e., MODE) shall correspond to any one inclusive combination of core reactivity condition, power level, and average reactor coolant temperature specified in Table 1.1.

PHYSICS TESTS

1.20 PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation and 1) described in Chapter 14.0 of the FSAR, 2) authorized under the provisions of 10 CFR 50.59, or 3) otherwise approved by the Commission.

PRESSURE BOUNDARY LEAKAGE

1.21 PRESSURE BOUNDARY LEAKAGE shall be leakage (except steam generator tube leakage) through a non-isolable fault in a Reactor Coolant System component body, pipe wall or vessel wall.

See ITS 1.0

~~PROCESS CONTROL PROGRAM~~

~~1.22 The PROCESS CONTROL PROGRAM (PCP) shall contain the current formulas, sampling, analyses, tests and determinations to be made to ensure that the processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of the radioactive waste.~~ (L.32)

PURGE - PURGING

1.23 PURGE or PURGING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is required to purify the confinement.

See ITS 1.0

A.1

ITS Section 1.1

1.~~0~~ 1 DEFINITIONS (Continued)

QUADRANT POWER TILT RATIO (QPTR) A.1

1.24 QUADRANT POWER TILT RATIO shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater. With one excore detector inoperable, the remaining three detectors shall be used for computing the average. ⟨See ITS 3.2.4⟩

RATED THERMAL POWER (RTP) A.1

1.25 RATED THERMAL POWER shall be a total reactor core heat transfer rate to the reactor coolant of 2893 MWt.

REACTOR TRIP SYSTEM RESPONSE TIME (RTS) A.1

1.26 The REACTOR TRIP SYSTEM RESPONSE TIME shall be the time interval from when the monitored parameter exceeds its trip setpoint at the channel sensor until loss of stationary gripper coil (RTS) voltage. Insert 1 L.4 Insert 2 A.10

~~REPORTABLE EVENT~~

~~1.27 A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.~~ A.8

SHUTDOWN MARGIN (SDM) A.1

1.28 SHUTDOWN MARGIN shall be the instantaneous control amount of (RCCAs) reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming all ~~full length~~ rod cluster assemblies ~~shutdown and control~~ are fully inserted except for the single rod cluster assembly of highest reactivity worth which is assumed to be FULLY WITHDRAWN. Insert 3 A.3

~~SITE BOUNDARY~~

~~1.29 The SITE BOUNDARY shall be that line beyond which the land is not owned, leased or otherwise controlled by the licensee.~~ A.8

SLAVE RELAY TEST A.18

1.30 A SLAVE RELAY TEST shall be the required slave energization of ~~each slave relay~~ all slave relays required for channel OPERABILITY and verification of OPERABILITY of each relay. The SLAVE RELAY TEST shall include a continuity check, ~~as a minimum,~~ of associated testable actuation devices. The SLAVE RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.

~~SOURCE CHECK~~

~~1.31 A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to radiation. This applies to installed radiation monitoring systems.~~ A.8

ITS

1.0 DEFINITIONS (Continued)

See ITS Section 1.1

QUADRANT POWER TILT RATIO

1.24 QUADRANT POWER TILT RATIO shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater. With one excore detector inoperable, the remaining three detectors shall be used for computing the average.

SR 3.2.4.1, Note 1

RATED THERMAL POWER

1.25 RATED THERMAL POWER shall be a total reactor core heat transfer rate to the reactor coolant of 2893 MWt.

REACTOR TRIP SYSTEM RESPONSE TIME

1.26 The REACTOR TRIP SYSTEM RESPONSE TIME shall be the time interval from when the monitored parameter exceeds its trip setpoint at the channel sensor until loss of stationary gripper coil voltage.

REPORTABLE EVENT

1.27 A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

SHUTDOWN MARGIN

1.28 SHUTDOWN MARGIN shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming all full length rod cluster assemblies (shutdown and control) are fully inserted except for the single rod cluster assembly of highest reactivity worth which is assumed to be FULLY WITHDRAWN.

SITE BOUNDARY

1.29 The SITE BOUNDARY shall be that line beyond which the land is not owned, leased or otherwise controlled by the licensee.

SLAVE RELAY TEST

1.30 A SLAVE RELAY TEST shall be the energization of each slave relay and verification of OPERABILITY of each relay. The SLAVE RELAY TEST shall include a continuity check, as a minimum, of associated testable actuation devices.

SOURCE CHECK

1.31 A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to radiation. This applies to installed radiation monitoring systems.

See ITS Section 1.1

ITS

1.0 DEFINITIONS (Continued)

Add proposed definition of Staggered Test Basis

Section 1.1

STAGGERED TEST BASIS

~~1.32 A STAGGERED TEST BASIS shall consist of:~~

~~a. A test schedule for n systems, subsystems, trains or other designated components obtained by dividing the specified test interval into n equal subintervals.~~

~~b. The testing of one system, subsystem, train or other designated component at the beginning of each subinterval.~~

A.15

THERMAL POWER

1.33 THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant. L.1

Add proposed definition of Trip Actuating Device Operational Test A.2

UNIDENTIFIED LEAKAGE

<Moved to Leakage on page 4 of 11>

1.34 UNIDENTIFIED LEAKAGE shall be all leakage which is not IDENTIFIED LEAKAGE ~~or CONTROLLED LEAKAGE~~ (except RCP seal water injection or leakoff). A.9

~~UNRESTRICTED AREA~~

~~1.35 An UNRESTRICTED AREA shall be any area at or beyond the SITE BOUNDARY where access is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials or any area within the SITE BOUNDARY used for residential quarters or for industrial, commercial, institutional, and/or recreational purposes.~~ A.8

~~VENTILATION EXHAUST TREATMENT SYSTEM~~

~~1.36 A VENTILATION EXHAUST TREATMENT SYSTEM is the system designed and installed to reduce gaseous radioiodine or radioactive material in particulate form in effluents by passing ventilation or vent exhaust gases through charcoal adsorbers and/or HEPA filters for the purpose of removing iodines or particulates from the gaseous exhaust stream prior to the release to the environment (such a system is not considered to have any effect on noble gas effluents). Engineered Safety Feature (ESF) atmospheric cleanup systems are not considered to be VENTILATION EXHAUST TREATMENT SYSTEM components.~~ A.8

~~VENTING~~

~~1.37 VENTING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is not provided or required during VENTING. Vent, used in system names, does not imply a VENTING process.~~ A.8

A.1

-1 (page 1 of 1)

5-5-83

ITS

Section 1.1

Table 1.1-1

TABLE 1.1

~~OPERATIONAL~~ MODES

MODE	TITLE	REACTIVITY CONDITION, K_{eff}	% RATED THERMAL POWER*	AVERAGE COOLANT TEMPERATURE (°F)
1.	POWER OPERATION	≥ 0.99	> 5%	~~≥ 350°F~~ NA
2.	STARTUP	≥ 0.99	≤ 5%	~~≥ 350°F~~ NA
3.	HOT STANDBY	< 0.99	~~0~~ NA	≥ 350°F
4.	HOT SHUTDOWN (b)	< 0.99	~~0~~ NA	350°F > T_{avg} > 200°F
5.	COLD SHUTDOWN (b)	< 0.99	~~0~~ NA	≤ 200°F
6.	REFUELING**	~~≤ 0.95~~ NA	~~0~~ NA	~~≤ 140°F~~ NA

A.1

A.17

LA.1

A.14

⟨Moved to definition of Mode on page 6 of 11⟩

~~*Excluding decay heat.~~

**Fuel in the reactor vessel ~~with the~~ One or more vessel head closure bolts less than fully tensioned ~~or with the head removed~~. 48

(b) All reactor vessel head closure bolts fully tensioned.

A.14

A.1

5-5-83

ITS

TABLE 1.2

FREQUENCY NOTATION

NOTATION	FREQUENCY
S	At least once per 12 hours.
D	At least once per 24 hours.
W	At least once per 7 days.
M	At least once per 31 days.
Q	At least once per 92 days.
SA	At least once per 184 days.
R	At least once per 18 months.
S/U	Prior to each reactor startup.
P	Completed prior to each release.
N.A.	Not applicable.

A.6

48

48

Section 1.2
Section 1.3
Section 1.4

Add proposed ITS Sections:
1.2 - Logical Connectors
1.3 - Completion Times
1.4 - Frequency

A.16

(A.1) Chapter 2.0

3-3-92

ITS

2.0 SAFETY LIMITS AND LIMITING SAFETY SYSTEM SETTINGS

2.1 SAFETY LIMITS

Insert proposed 2.1.1 (LA.1)

REACTOR CORE

2.1.1 2.1.1 ~~The combination of THERMAL POWER, pressurizer pressure, and the highest operating loop coolant temperature (T_{avg}) shall not exceed the limits shown in Figures 2.1-1*~~ for 3 loop operation and ~~2.1-2 and 2.1-3 for 2 Loop operation.~~ (A.2)

APPLICABILITY: MODES 1 and 2.

ACTION:

2.2.1 Whenever the point defined by the combination of the highest operating loop average temperature and THERMAL POWER has exceeded the appropriate pressurizer pressure line, be in HOT STANDBY within 1 hour.

REACTOR COOLANT SYSTEM PRESSURE

2.1.2 2.1.2 The Reactor Coolant System pressure shall not exceed 2735 psig.

APPLICABILITY: MODES 1, 2, 3, 4 and 5.

ACTION:

MODES 1 and 2

2.2.2.1 Whenever the Reactor Coolant System pressure has exceeded 2735 psig, be in HOT STANDBY with the Reactor Coolant System pressure within its limit within 1 hour.

MODES 3, 4 and 5

2.2.2.2 Whenever the Reactor Coolant System pressure has exceeded 2735 psig, reduce the Reactor Coolant System pressure to within its limit within 5 minutes.

~~* For the period of operation until steam generator replacement, the combination of THERMAL POWER, pressurizer pressure, and the highest operating loop coolant temperature (T_{avg}) shall not exceed the limits shown in Figure 2.1-1a.~~ (A.3)

Chapter 2.0

8-25-86

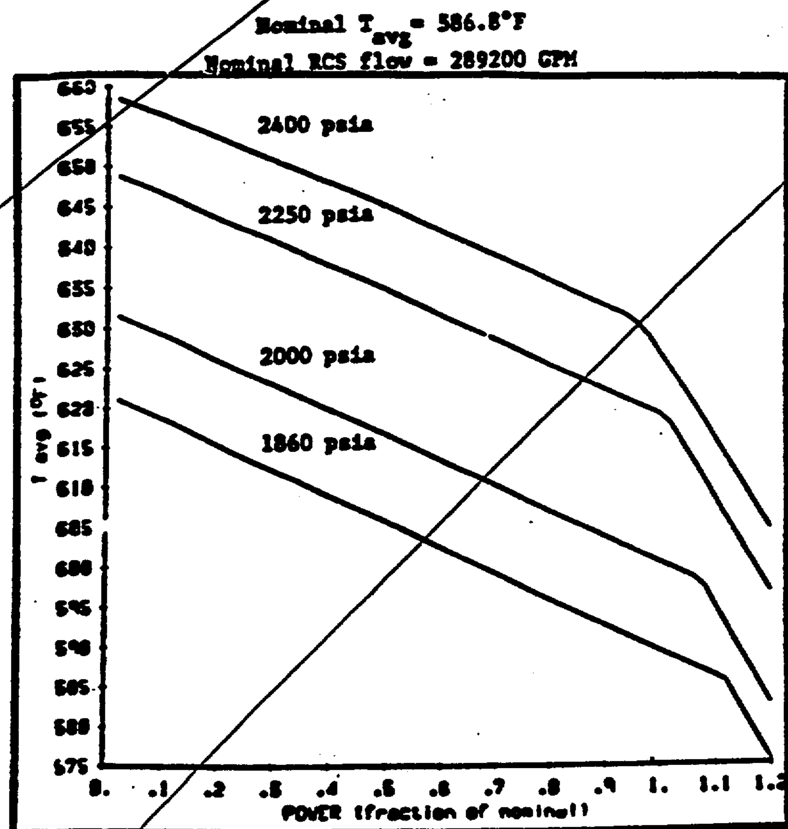


Figure 2.1-1 **REACTOR CORE SAFETY LIMITS FOR THREE LOOP OPERATION**

LA.1

page 2 of 6

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A.3

Nominal T_{avg} = 586.8°F
Nominal RCS flow = 268,500 GPM

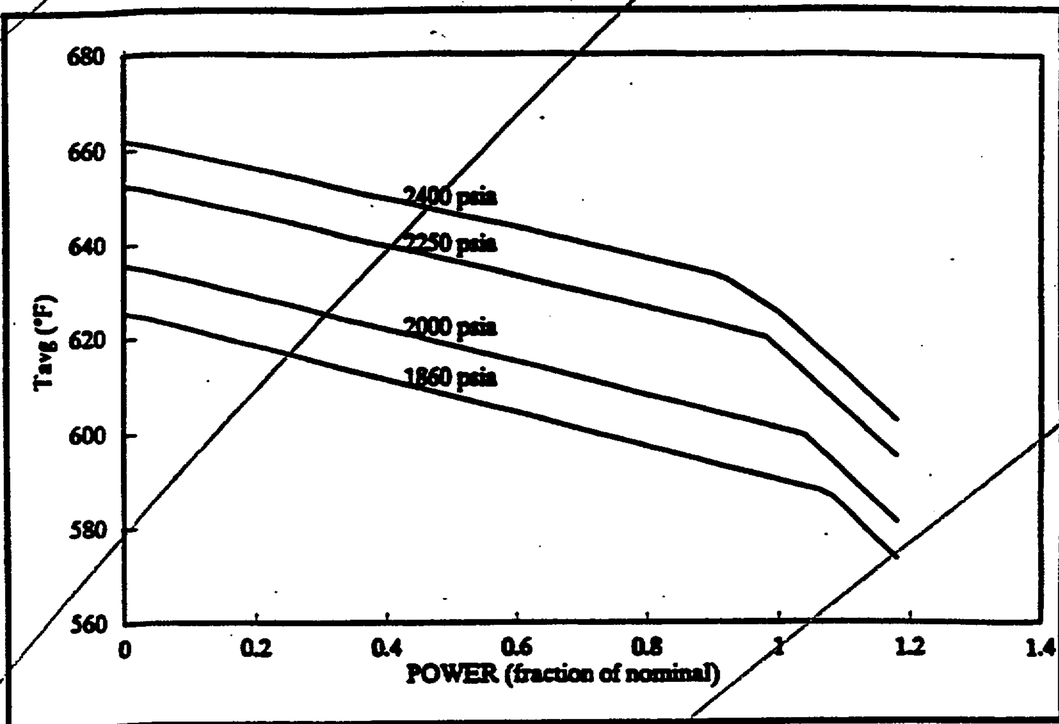

Figure 2.1-1a REACTOR CORE SAFETY LIMITS FOR THREE LOOP OPERATION FOR THE PERIOD OF OPERATION UNTIL STEAM GENERATOR REPLACEMENT

11-26-77

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REACTOR CORE SAFETY LIMIT - TWO LOOPS IN OPERATION
(ONE LOOP ISOLATED)

FIGURE 2.1-2

A.2

11-26-77

This page left blank pending NRC approval of ECCS evaluation of two loops in operation with the third loop not isolated.

REACTOR CORE SAFETY LIMIT - TWO LOOP OPERATION

(LOOP STOP VALVES OPEN)

FIGURE 2.1-3

A.2

(A.1)

2.2 LIMITING SAFETY SYSTEM SETTINGS

REACTOR TRIP SYSTEM INSTRUMENTATION SETPOINTS

2.2.1 The reactor trip system instrumentation setpoints shall be set consistent with the Trip Setpoint values shown in Table 2.2-1.

(LA.11)

APPLICABILITY: As shown for each channel in Table 3.3-1.

ACTION:

With a reactor trip system instrumentation setpoint less conservative than the value shown in the Allowable Values column of Table 2.2-1, declare the channel inoperable and apply the applicable ACTION statement requirement of Specification 3.3.1.1 until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.

(LA.7)

A.1

TABLE 2.2-1

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

ALLOWABLE Values

LA.11

ITS	FUNCTIONAL UNIT	TRIP SETPOINT (LA.11)	ALLOWABLE VALUES	
1	1. Manual Reactor Trip	~~Not Applicable~~	Not Applicable	
2b	2. Power Range, Neutron Flux	~~Low Setpoint - ≤ 25% of RATED THERMAL POWER~~	Low Setpoint - ≤ 26% of RATED THERMAL POWER	
2a		~~High Setpoint - ≤ 109%** of RATED THERMAL POWER~~	High Setpoint - ≤ 110%*** of RATED THERMAL POWER	A.6
3a	3. Power Range, Neutron Flux, High Positive Rate	~~≤ 5% of RATED THERMAL POWER with a time constant ≥ 2 seconds~~	≤ 5.5% of RATED THERMAL POWER with a time constant ≥ 2 seconds	
3b	4. Power Range, Neutron Flux, High Negative Rate	~~≤ 5% of RATED THERMAL POWER with a time constant ≥ 2 seconds~~	≤ 5.5% of RATED THERMAL POWER with a time constant ≥ 2 seconds	
4	5. Intermediate Range, Neutron Flux	~~≤ 35% of RATED THERMAL POWER~~	≤ 40% of RATED THERMAL POWER	
5	6. Source Range, Neutron Flux	~~≤ 10^5 counts per second~~	≤ 1.3 x 10^5 counts per second	
6	7. Overtemperature ΔT	~~See Note 1~~	See Note 3 Note 1	LA.11
7	8. Overpower ΔT	~~See Note 2~~	See Note 3 Note 2	
8a	9. Pressurizer Pressure – Low	~~≥ 1870 psig~~	≥ 1860 psig	
8b	10. Pressurizer Pressure – High	~~≤ 2360 psig~~	≤ 2370 psig	
9	11. Pressurizer Water Level – High	~~≤ 92% of instrument span~~	≤ 93% of instrument span	
10	12. Loss of Flow	~~≥ 90% of design flow per loop*~~	≥ 89% ~~of design flow per loop*~~	LA.8

* ~~Design flow per loop is one-third of the minimum allowable Reactor Coolant System Total Flow Rate as specified in Table 3.2-1.~~ LA.8

** ~~The high trip setpoint for Power Range, Neutron Flux, shall be ≤ 103% RATED THERMAL POWER for the period of operation until steam generator replacement.~~

*** ~~The allowable value for the high trip setpoint for Power Range, Neutron Flux, is required to be ≤ 104% RATED THERMAL POWER for the period of operation until steam generat[illegible] replacement.~~ A.6

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ITS 2.2.1

07-30-97

A.1

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION ~~TRIP SETPOINTS~~ Allowable Values

LA.11

ITS	FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES	
14	13. Steam Generator Water Level--Low-Low	≥ 18% of narrow range instrument span-each steam generator	≥ 17% of narrow range instrument span-each steam generator	LA.10
15	14. Steam/Feedwater Flow Mismatch and Low Steam Generator Water Level	≤ 40% of full steam flow at RATED THERMAL POWER coincident with steam generator water level ≥ 25% of narrow range instrument span--each steam generator	≤ 42.5% of full steam flow at RATED THERMAL POWER coincident with steam generator water level ≥ 24% of narrow range instrument span--each steam generator	LA.10
12	15. Undervoltage-Reactor Coolant Pump Busses	≥ 2905 volts-each bus	≥ 2870 volts-each bus	
13	16. Underfrequency-Reactor Coolant Pump Busses	≥ 56.1 Hz - each bus	≥ 56.0 Hz - each bus	
16	17. Turbine Trip			
	A. Low Trip System Pressure	≥ 45 psig	≥ 40 psig	
	B. Turbine Stop Valve Closure	≥ 1% open	≥ 0% open	
17	18. Safety Injection Input from ESF	Not Applicable	Not Applicable	
11	19. Reactor Coolant Pump Breaker Position Trip	Not Applicable	Not Applicable	

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A.1

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TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION ~~TRIP SETPOINTS~~ ALLOWABLE VALUES LA.11

NOTATION

NOTE 1: Overtemperature $\Delta T \leq \Delta T_0 \, [K_1 - K_2 \left(\frac{1+\tau_1 S}{1+\tau_2 S}\right) (T-T') + K_3(P-P') - f_1(\Delta I)]$

where: ΔT_0 = Indicated ΔT at RATED THERMAL POWER

T = Average temperature, ^{o}F

T' = Indicated T_{avg} at RATED THERMAL POWER $\leq$ 586.8* ^{o}F LA.5

P = Pressurizer pressure, psig

P' = ~~=~~ $\geq$ 2235* psig (indicated RCS nominal operating pressure) LA.5 L.19

$\frac{1+\tau_1 S}{1+\tau_2 S}$ = The function generated by the lead-lag controller for T_{avg} dynamic compensation

τ_1 & τ_2 = Time constants* utilized in the lead-lag controller for T_{avg} τ_1 ~~=~~ $\geq$ 25* secs, τ_2 ~~=~~ $\leq$ 4 secs. LA.5 L.19

S = Laplace transform operator (sec^{-1})

The values denoted by * are specified in the COLR. LA.5

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(A.1)

TABLE 2.2-1 (Continued) ALLOWABLE VALUES

REACTOR TRIP SYSTEM INSTRUMENTATION ~~TRIP SETPOINTS~~ (LA.11)

NOTATION (Continued)

Operation with 3 Loops	Operation with 2 Loops (no loops isolated)*	Operation with 2 Loops (1 loop isolated)*
$K_1 \leq 1.264$** *	$K_1 = (\ \ )$	$K_1 = (\ \ )$
$K_2 \geq 0.0220$	$K_2 = (\ \ )$	$K_2 = (\ \ )$
$K_3 \geq 0.001152$ *	$K_3 = (\ \ )$	$K_3 = (\ \ )$

(A.6) (LA.5) (L.19)

and $f_1(\Delta I)$ is a function of the indicated difference between top and bottom detectors of the power-range nuclear ion chambers; ~~with gains to be selected based on measured instrument response during plant startup tests such that:~~ (A.24) (LA.5)

(i) for $q_t - q_b$ between -44 * percent and +3 * percent, $f_1(\Delta I) = 0$ (where q_t and q_b are percent RATED THERMAL POWER in the top and bottom halves of the core respectively, and $q_t + q_b$ is total THERMAL POWER in percent of RATED THERMAL POWER).

(ii) for each percent that the magnitude of $(q_t - q_b)$ exceeds -44 * percent, the ΔT trip setpoint shall be automatically reduced by 1.67 * percent of its value at RATED THERMAL POWER. (LA.5)

(iii) for each percent that the magnitude of $(q_t - q_b)$ exceeds +3 * percent, the ΔT trip setpoint shall be automatically reduced by 2.00 * percent of its value at RATED THERMAL POWER. (LA.5)

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* ~~Values dependent on NRC approval of ECCS evaluation for these operating conditions.~~
** ~~The value for K_1 shall be equal to 1.132 for the period of operation until steam generator replacement.~~ (A.6)

The values denoted by * are SPECIFIED in the COLR. (LA.5)

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A.1

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION ~~TRIP SETPOINTS~~ ALLOWABLE Values

NOTATION (Continued)

LA.11

Note 2: Overpower $\Delta T \leq \Delta T_0 \left[K_4 - K_5 \left(\frac{\tau_3 S}{1+\tau_3 S} \right) T - K_6 (T - T') - f_2(\Delta I) \right]$

Where:

ΔT_0	=	Indicated ΔT at RATED THERMAL POWER
T	=	Average temperature, °F
T'	=	Indicated T_{avg} at RATED THERMAL POWER ≤ 586.8°F
K_4	≤	* 1.079
K_5	≥	* 0.02/°F for increasing average temperature
K_5	=	* 0 for decreasing average temperatures
K_6	≥	0.00164 * for $T > T'$; K_6 = 0 * for $T \leq T'$
$\frac{\tau_3 S}{1+\tau_3 S}$	=	~~The function generated by the rate lag controller for T_{avg} dynamic compensation~~
τ_3	=	~~Time constant utilized in the rate lag controller for T_{avg}~~
		τ_3 ≤ 10 * secs.
S	=	Laplace transform operator (sec^{-1})
$f_2(\Delta I)$	=	0 for all ΔI *

A.6

LA.5

L.19

LA.5

LA.9

L.19

LA.5

LA.5

Note 3: The channel's maximum trip point shall not exceed its computed trip point by more than 2 percent span for OverPower ΔT 2.3 percent span for Overtemperature ΔT

A.1

L.21

3-3-92

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~~* The value for K_4 shall be equal to 1.016 for the period of operation until steam generator replacement.~~

The values denoted by * are specified in the COLR

A.6

LA.5

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(LCO) .0

~~3/4~~ LIMITING CONDITIONS FOR OPERATION ~~AND SURVEILLANCE REQUIREMENTS~~ A.1

~~3/4.0~~ APPLICABILITY

ITS

LIMITING CONDITION FOR OPERATION

3.0.1 3.0.1 Limiting Conditions for Operation ~~and ACTION requirements~~ shall be ~~applicable~~ met during the ~~OPERATIONAL~~ MODES or other conditions ~~specified for each Specification~~. Insert 1 A.2

3.0.2 3.0.2 ~~Adherence to the requirements of the Limiting Condition for Operation and/or associated ACTION within the specified time interval shall constitute compliance with the Specification. In the event the Limiting Condition for Operation is restored prior to expiration of the specified time interval, completion of the ACTION statement is not required.~~ Insert proposed LCO 3.0.2 A.3

3.0.3 3.0.3 When a Limiting Condition for Operation is not met, ~~except as provided in~~ and the associated ACTION ~~requirements~~ (5) Insert 2 ~~within one hour~~ ACTION shall be initiated to place the unit ~~in a MODE in which the Specification does not apply by placing it~~, as applicable, in: A.4

MODE 3 1. At least ~~HOT STANDBY~~ within ~~6~~ 7 hours, A.5

MODE 4 2. At least ~~HOT SHUTDOWN~~ within ~~the next 6~~ 13 hours, and

MODE 5 3. At least ~~COLD SHUTDOWN~~ within ~~the following 24~~ 37 hours.

Where corrective measures are completed that permit operation ~~under the ACTION requirements, the ACTION may be taken in accordance with the specified time limits as measured from the time of failure to meet the Limiting Condition for Operation.~~ Insert 3 Exceptions to these requirements are stated in the individual Specifications. This specification is ~~not~~ only applicable in MODES ~~5 or 6~~ 1, 2, 3, and 4. A.6

3.0.4 3.0.4 ~~Entry into an OPERATIONAL MODE or other specified applicability condition shall not be made unless the conditions of the Limiting Condition for Operation are met without reliance on provisions contained in the ACTION statements unless otherwise excepted. This provision shall not prevent passage through OPERATIONAL MODES as required to comply with ACTION statements.~~ Insert proposed LCO 3.0.4 A.7 L.1 L.4

3.0.5

~~3.0.5 When a system, subsystem, train, component, or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided:~~

~~1. Its corresponding normal or emergency power source is OPERABLE, and~~
~~2. All of its redundant system(s), subsystem(s), train(s), component(s), and device(s) are OPERABLE, or likewise satisfy the requirements of this Specification.~~

~~Unless both conditions 1. and 2. above are satisfied, within one hour ACTION shall be initiated to place the unit in a MODE in which the Specification does not apply by placing it, as applicable, in:~~

~~1. At least HOT STANDBY within 6 hours,~~
~~2. At least HOT SHUTDOWN within the next 6 hours, and~~
~~3. At least COLD SHUTDOWN within the following 24 hours.~~

~~Exceptions to these requirements are stated in the individual Specifications. This Specification is not applicable in MODES 5 or 6.~~

3.0.6 Insert proposed LCO 3.0.6 L.3

3.0.7 Insert proposed LCO 3.0.7 A.8

Insert proposed LCO 3.0.5 L.2

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ITS

SURVEILLANCE REQUIREMENTS (SR)

A.1

SR3.0.1 4.0.1 Surveillance Requirements [in the Applicability] shall be applicable [met] during the OPERATIONAL MODES or other conditions specified for individual Limiting Conditions for Operation unless otherwise stated in an [the] individual Surveillance Requirement. Insert 4 A.9

SR3.0.2 ~~4.0.2 Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the surveillance interval.~~ Insert proposed SR 3.0.2 L.5 A.10 M.2

SR3.0.3 ~~4.0.3 Failure to perform a Surveillance Requirement within the allowed surveillance interval, defined by Specification 4.0.2, shall constitute noncompliance with the operability requirements for a Limiting Condition for Operation. The time limits of the action statement requirements are applicable at the time it is identified that a surveillance requirement has not been performed. The action statement requirements may be delayed for up to 24 hours to permit the completion of the surveillance when the allowable outage time limits of the action statement requirements are less than 24 hours. Surveillance requirements do not have to be performed on inoperable equipment.~~ A.9 Add proposed SR 3.0.3 M.1 A.11 A.9

S.R.3.0.4 4.0.4 Entry into an OPERATIONAL MODE or other specified applicability condition [in the Applicability of an LCO] shall not be made unless the Surveillance Requirement(s) associated with the Limiting Condition for Operation have been performed [met] within the stated surveillance interval ~~or as otherwise specified.~~ Insert 5 A.1 A.12 L.4

4.0.5 Surveillance Requirements for inservice inspection and testing of ASME Code Class 1, 2, and 3 components shall be applicable as follows:

a. Inservice inspection of ASME Code Class 1, 2, and 3 components and inservice testing of ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g)(6)(i).

<See ITS 5.0>

(A.1)

ITS 5.0

ITS 5.5 5.5.7

APPLICABILITY

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SURVEILLANCE REQUIREMENTS

4.0.1 Surveillance Requirements shall be applicable during the OPERATIONAL MODES or other conditions specified for individual Limiting Conditions for Operation unless otherwise stated in an individual Surveillance Requirement.

4.0.2 Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the surveillance interval.

See ITS 3.0

4.0.3 Failure to perform a Surveillance Requirement within the allowed surveillance interval, defined by Specification 4.0.2, shall constitute noncompliance with the operability requirements for a Limiting Condition for Operation. The time limits of the action statement requirements are applicable at the time it is identified that a surveillance requirement has not been performed. The action statement requirements may be delayed for up to 24 hours to permit the completion of the surveillance when the allowable outage time limits of the action statement requirements are less than 24 hours. Surveillance requirements do not have to be performed on inoperable equipment.

4.0.4 Entry into an OPERATIONAL MODE or other specified applicability condition sł not be made unless the Surveillance Requirement(s) associated with the Limiting Condition ƚ. Operation have been performed within the stated surveillance interval or as otherwise specified.

5.5.7 4.0.5 Surveillance Requirements for inservice inspection and testing of ASME Code Class 1, 2, and 3 components shall be applicable as follows:

(A.2)

5.5.7.a a. ~~Inservice inspection of ASME Code Class 1, 2, and 3 components and inservice testing of ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g)(6)(i).~~

ITS

5.5 APPLICABILITY

5.5.7 SURVEILLANCE REQUIREMENTS (Continued)

5.5.7.a b. Surveillance intervals specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for the inservice inspection and testing activities required by the ASME Boiler and Pressure Vessel Code and applicable Addenda shall be applicable as follows in these Technical Specifications: A.21

ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice inspection and testing activities	Required frequencies for performing inservice inspection and testing activities
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
Every 9 months	At least once per 276 days
Yearly or annually	At least once per 366 days
Biennially or every 2 years	At least once per 731 days

13

A.13

5.5.7.b c. The provisions of Specification 4.0.2 SR3.0.2 are applicable to the above required frequencies for performing inservice inspection and testing activities. A.21 A.20

d. Performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements. 13 A.32

Insert proposed ITS 5.5.7.c

5.5.7.d e Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any Technical Specification. L.20

ITS

3.0 (A.1)

APPLICABILITY

(SR)

SURVEILLANCE REQUIREMENTS ~~(Continued)~~

b. Surveillance intervals specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for the inservice inspection and testing activities required by the ASME Boiler and Pressure Vessel Code and applicable Addenda shall be applicable as follows in these Technical Specifications:

ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice inspection and testing activities	Required frequencies for performing inservice inspection and testing activities
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
Every 9 months	At least once per 276 days
Yearly or annually	At least once per 366 days

13

c. The provisions of Specification 4.0.2 are applicable to the above required frequencies for performing inservice inspection and testing activities.

d. Performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements. 13

e Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any Technical Specification.

(See ITS 5.0)

ITS 3.1.1

A.1

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ITS

3/4.1 REACTIVITY CONTROL SYSTEMS

3/4.1.1 BORATION CONTROL

SHUTDOWN MARGIN ~~- T_{avg} > 200°F~~ A.2

LIMITING CONDITION FOR OPERATION A.3

LCO 3.1.1

3.1.1.1 The SHUTDOWN MARGIN shall be ~~≥ 1.77% Δk/k~~. within the limits provided in the COLR LA.1 A.5

APPLICABILITY: MODES ~~1~~, 2*, 3, and 4. with K_{eff} < 1.0 LA.1

ACTION: not within limit — within 15 minutes L.1

Action A

With the SHUTDOWN MARGIN ~~< 1.77% Δk/k~~, ~~immediately~~ initiate ~~and continue~~ boration ~~at ≥ 10 gpm of 12,950 ppm boric acid solution or equivalent~~ until the required SHUTDOWN MARGIN is restored. L.2

SURVEILLANCE REQUIREMENTS

SR 3.1.1.1

4.1.1.1.1 Verify The SHUTDOWN MARGIN ~~shall be determined to be ≥ 1.77% Δk/k~~: is within limit LA.1

Action 3.1.4.A.1.1
Action 3.1.4.B.1.1
SDM definition

a. Within one 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 increased by an amount at least equal to the withdrawn worth of the immovable or untrippable control rod(s). ⟨See ITS 3.1.4⟩

b. When in MODES 1 or 2#, 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##, 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.

⟨See ITS 3.1.6⟩

A.4

~~*See Special Test Exception 3.10.1~~

#With K_{eff} ≥ 1.0

##With K_{eff} <1.0

⟨See ITS 3.1.6⟩

A.1

9-9-85 ITS 3.1.2

ITS

3/4.1 REACTIVITY CONTROL SYSTEMS

3/4.1.1 BORATION CONTROL

SHUTDOWN MARGIN - T_{avg} > 200°F

LIMITING CONDITION FOR OPERATION

3.1.1.1 The SHUTDOWN MARGIN shall be ≥ 1.77% Δk/k. <See ITS 3.1.1>

3.1.2 Applicability

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

ACTION:

With the SHUTDOWN MARGIN < 1.77% Δk/k, immediately initiate and continue boration at ≥ 10 gpm of 12,950 ppm boric acid solution or equivalent until the required SHUTDOWN MARGIN is restored. <see ITS 3.1.1>

SURVEILLANCE REQUIREMENTS

4.1.1.1.1 The SHUTDOWN MARGIN shall be determined to be ≥ 1.77% Δk/k:

a. Within one 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 increased by an amount at least equal to the withdrawn worth of the immovable or untrippable control rod(s). <See ITS 3.1.4>

b. When in MODES 1 or 2#, 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##, 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. <see ITS 3.1.6>

*See Special Test Exception 3.10.1 <see ITS 3.1.1>

#With K_{eff} ≥ 1.0

##With K_{eff} <1.0 <see ITS 3.1.6>

A.1

ITS 3.1.4

3/4.1 REACTIVITY CONTROL SYSTEMS

3/4.1.1 BORATION CONTROL

SHUTDOWN MARGIN - T_{avg} > 200°F

<See ITS 3.1.1>

LIMITING CONDITION FOR OPERATION

3.1.1.1 The SHUTDOWN MARGIN shall be ≥ 1.77% Δk/k.

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

ACTION:

With the SHUTDOWN MARGIN < 1.77% Δk/k, immediately initiate and continue boration at ≥ 10 gpm of 12,950 ppm boric acid solution or equivalent until the required SHUTDOWN MARGIN is restored.

SURVEILLANCE REQUIREMENTS

4.1.1.1.1 The SHUTDOWN MARGIN shall be determined to be ≥ 1.77% Δk/k:

a. ~~Within one 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 increased by an amount at least equal to the withdrawn worth of the immovable or untrippable control rod(s).~~

A.7

b. When in MODES 1 or 2#, 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##, 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.

<See ITS 3.1.6>

*See Special Test Exception 3.10.1 <see ITS 3.1.1>

#With K_{eff} ≥ 1.0

##With K_{eff} <1.0

<See ITS 3.1.6>

A.1

ITS 3.1.6

ITS

3/4.1 REACTIVITY CONTROL SYSTEMS

3/4.1.1 BORATION CONTROL

SHUTDOWN MARGIN - T_{avg} > 200°F

LIMITING CONDITION FOR OPERATION

<See ITS 3.1.1>

3.1.1.1 The SHUTDOWN MARGIN shall be ≥ 1.77% Δk/k.

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

ACTION:

With the SHUTDOWN MARGIN < 1.77% Δk/k, immediately initiate and continue boration at ≥ 10 gpm of 12,950 ppm boric acid solution or equivalent until the required SHUTDOWN MARGIN is restored.

SURVEILLANCE REQUIREMENTS

4.1.1.1.1 The SHUTDOWN MARGIN shall be determined to be ≥ 1.77% Δk/k:

<See ITS 3.1.4>

a. Within one 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 increased by an amount at least equal to the withdrawn worth of the immovable or untrippable control rod(s).

SR 3.1.6.2

b. When in MODES 1 or 2#, at least once per 12 hours by verifying that control bank withdrawal is within the limits of Specification 3.1.3.6.

SR 3.1.6.1

c. When in MODE 2##, 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.

*See Special Test Exception 3.10.1 <see ITS 3.1.1>

#With K_{eff} ≥ 1.0

##With K_{eff} <1.0

(A.1)

ITS

SURVEILLANCE REQUIREMENTS (Continued)

d. ~~Prior to initial operation above 5% RATED THERMAL POWER after each fuel loading, by consideration of the factors of e below, with the control banks at the maximum insertion limit of Specification 3.1.3.6.~~ (L.3)

SR 3.1.1.1 e. ~~When in MODES 3 or 4,~~ at least once per 24 hours ~~by consideration of the following factors:~~ (M.1)

1. ~~Reactor coolant system boron concentration,~~
2. ~~Control rod position,~~
3. ~~Reactor coolant system average temperature,~~ (LA.2)
4. ~~Fuel burnup based on gross thermal energy generation,~~
5. ~~Xenon concentration, and~~
6. ~~Samarium concentration.~~

4.1.1.1.2 The overall core reactivity balance shall be compared to predicted values to demonstrate agreement within ± 1% Δk/k at least once per 31 Effective Full Power Days (EFPD). This comparison shall consider at least those factors stated in Specification 4.1.1.1.1.e, above. The predicted reactivity values shall be adjusted (normalized) to correspond to the actual core conditions prior to exceeding a fuel burnup of 60 Effective Full Power Days after each fuel loading. ⟨See ITS 3.1.2⟩

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A.1

ITS 3.1.2

REACTIVITY CONTROL SYSTEMS

ITS

SURVEILLANCE REQUIREMENTS (Continued)

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

e. When in MODES 3 or 4, at least once per 24 hours by consideration of the following factors:

See ITS 3.1.1

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.

Once prior to entering MODE 1 after each refueling and

M.1

SR3.1.2.1

4.1.1.1.2 The overall core reactivity balance shall be compared to predicted values to demonstrate agreement within ± 1% Δk/k ~~at least once per 31 Effective Full Power Days (EFPD). This comparison shall consider at least those factors stated in Specification 4.1.1.1.1.e. above.~~ The predicted reactivity values shall be adjusted (normalized) to correspond to the actual core conditions prior to exceeding a fuel burnup of 60 Effective Full Power Days after each fuel loading.

LA.1

SR 3.1.2.1
SR NOTE

after 60 EFPD

L.3

LCO3.1.2

Insert proposed LCO

A.2

3.1.2 Actions

Insert proposed Actions

L.2

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A.1

ITS 3.1.1

ITS

REACTIVITY CONTROL SYSTEMS

SHUTDOWN MARGIN ~~- $T_{avg} \leq 200°F$~~ A.2

LIMITING CONDITION FOR OPERATION

LCO 3.1.1 — 3.1.1.2 The SHUTDOWN MARGIN shall be ~~≥ 1.77% Δk/k~~ within the limits provided in the COLR LA.1

APPLICABILITY: MODE 5.

ACTION: not within limit LA.1

Action A — With the SHUTDOWN MARGIN ~~< 1.77% Δk/k~~, ~~immediately~~ within 15 minutes initiate ~~and continue~~ boration ~~at ≥ 10 gpm of 12,950 ppm boric acid solution or equivalent~~ until the required SHUTDOWN MARGIN is restored. L.1 L.2

SURVEILLANCE REQUIREMENTS

SR 3.1.1.1 — 4.1.1.2 Verify The SHUTDOWN MARGIN ~~shall be determined to be ≥ 1.77% Δk/k~~ is within limit: LA.1

a. Within one 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 increased by an amount at least equal to the withdrawn worth of the immovable or untrippable control rod(s). <see ITS 3.1.4>

SR 3.1.1.1 — b. At least once per 24 hours ~~by consideration of the following factors:~~ LA.2

~~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.~~

A.1

ITS 3.1.4

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REACTIVITY CONTROL SYSTEMS

SHUTDOWN MARGIN - $T_{avg} \leq 200°F$

LIMITING CONDITION FOR OPERATION

3.1.1.2 The SHUTDOWN MARGIN shall be $\geq$ 1.77% $\Delta k/k$.

APPLICABILITY: MODE 5.

ACTION:

With the SHUTDOWN MARGIN < 1.77% $\Delta k/k$, immediately initiate and continue boration at $\geq$ 10 gpm of 12,950 ppm boric acid solution or equivalent until the required SHUTDOWN MARGIN is restored.

⟨See ITS 3.1.1⟩

SURVEILLANCE REQUIREMENTS

4.1.1.2 The SHUTDOWN MARGIN shall be determined to be $\geq$ 1.77% $\Delta k/k$:

a. ~~Within one 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 increased by an amount at least equal to the withdrawn worth of the immovable or untrippable control rod(s).~~

A.7

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.

⟨See ITS 3.1.1⟩

CTS 3.1.1.3.1

REACTIVITY CONTROL SYSTEMS

BORON DILUTION

REACTOR COOLANT FLOW

LIMITING CONDITION FOR OPERATION

3.1.1.3.1 The flow rate of reactor coolant through the reactor coolant system shall be ≥ 3000 gpm whenever a reduction in Reactor Coolant System boron concentration is being made.

R.1

APPLICABILITY: All MODES.

ACTION:

With the flow rate of reactor coolant through the reactor coolant system < 3000 gpm, immediately suspend all operations involving a reduction in boron concentration of the Reactor Coolant System.

SURVEILLANCE REQUIREMENTS

4.1.1.3.1 The flow rate of reactor coolant through the reactor coolant system shall be determined to be ≥ 3000 gpm within one hour prior to the start of and at least once per hour during a reduction in the Reactor Coolant System boron concentration by either:

a. Verifying at least one reactor coolant pump is in operation, or

b. Verifying that at least one RHR pump is in operation and supplying ≥ 3000 gpm through the reactor coolant system.

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ITS 3.1.8

REACTIVITY CONTROL SYSTEMS

BORON DILUTION

VALVE POSITION

ITS

LIMITING CONDITION FOR OPERATION

Insert proposed LCO 3.1.8
Insert proposed LCO 3.1.8 Note

LCO 3.1.8 — 3.1.1.3.2 The following valves shall be locked, sealed or otherwise secured in the closed position except during planned boron dilution or makeup activities — A.2

a. 1-CH-217 or

b. 1-CH-220, 1-CH-241, FCV-1114B and FCV-1113B. — LA.2

APPLICABILITY: MODES 3, 4, 5, and 6 <See ITS 3.9.2>

ACTION:

With the above valves not locked, sealed or otherwise secured in the closed position:

a. In MODES 3 and 4 be in COLD SHUTDOWN within 30 hours — L.1

Action A.1 / Action A.2 — b. In MODES 5 and 6 suspend all operations involving positive reactivity changes ~~or CORE ALTERATIONS~~ and lock, seal or otherwise secure the valves in the closed position within 15 minutes. — A.3

Action A.3 — Perform SR 3.1.1.1 within 1 hour — M.1

SURVEILLANCE REQUIREMENTS

SR 3.1.8.1 — 4.1.1.3.2 The above listed valves shall be verified to be locked, sealed or otherwise secured in the closed position within 15 minutes after a planned boron dilution or makeup activity.

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ITS

REACTIVITY CONTROL SYSTEMS

BORON DILUTION

VALVE POSITION

Insert proposed LCO 3.9.2
Insert proposed LCO 3.9.2 Note

LIMITING CONDITION FOR OPERATION

LCO 3.9.2

3.1.1.3.2 The following valves shall be locked, sealed or otherwise secured in the closed position except during planned boron dilution or makeup activities — A.2

a. 1-CH-217 ~~or~~

b. 1-CH-220, 1-CH-241~~, FCV-1114B and FCV-1113B~~. — LA.2

APPLICABILITY: MODES 3, 4, 5, and ~~6~~ — <See ITS 3.1.8>

ACTION:

With the above valves not locked, sealed or otherwise secured in the closed position:

a. In MODES 3 and 4 be in COLD SHUTDOWN within 30 hours — <See ITS 3.1.8>

Action A.1, A.2, A.3

b. In MODES 5 and 6 suspend all operations involving positive reactivity changes or CORE ALTERATIONS and lock, seal or otherwise secure the valves in the closed position within 15 minutes.

Action A.4

Insert Proposed ITS 3.9.2, Action A.4 — M.1

SURVEILLANCE REQUIREMENTS

SR 3.9.2.1

4.1.1.3.2 The above listed valves shall be verified to be locked, sealed or otherwise secured in the closed position within 15 minutes after a planned boron dilution or makeup activity.

A.1

ITS 3.1.3

MODERATOR TEMPERATURE COEFFICIENT

ITS

LIMITING CONDITION FOR OPERATION

LCO 3.1.3

3.1.1.4 The moderator temperature coefficient (MTC) shall be within the limits specified in the CORE OPERATING LIMITS REPORT (COLR). The maximum upper limit shall be $\leq 0.6 \times 10^{-4}$ Δk/k/°F below 70 percent RATED THERMAL POWER and ≤ 0.0 ~~$\times 10^{-4}$~~ Δk/k/°F at or above 70 percent RATED THERMAL POWER. A.2

APPLICABILITY: Upper ~~Beginning of Cycle (BOC)~~ Limit - MODES 1 and 2* only~~#~~ A.3 A.4

~~End of Cycle (EOC)~~ Lower Limit - MODES 1, 2 and 3 only~~#~~

ACTION:

a. With the MTC more positive than the ~~BOC~~ Upper limit specified in the CORE OPERATING LIMITS REPORT: A.4

MODE 2 with Keff < 1.0 A.5

Action A
Action B

1. Establish and maintain control rod withdrawal ~~limits sufficient to restore the MTC to within its limit within 24 hours or be in~~ HOT STANDBY within the next 6 hours. ~~These withdrawal limits shall be in addition to the insertion limits of Specification 3.1.3.6.~~ A.6

~~2. Maintain the control rods within the withdrawal limits established above until subsequent measurement verifies that the MTC has been restored to within its limit for the all rods withdrawn condition.~~ L.2

~~3. Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 10 days, describing the value of the measured MTC, the interim control rod withdrawal limits and the predicted average core burnup necessary for restoring the positive MTC to within its limit for the all rods withdrawn condition.~~ L.1

Action C

4. With the MTC more negative than the ~~EOC~~ lower limit specified in the CORE OPERATING LIMITS REPORT, be in HOT SHUTDOWN within 12 hours. A.4

*With $K_{eff} \geq 1.0$

~~#See Special Test Exception 3.10.3~~ A.3

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A.1

ITS 3.1.3

6-7-91

ITS

SURVEILLANCE REQUIREMENTS

4.1.1.4 The MTC shall be determined to be within its limits during each fuel cycle as follows: upper A.4

SR 3.1.3.1 a. The MTC shall be measured and compared to the BOC limit specified in the CORE OPERATING LIMITS REPORT, prior to initial operation above 5% of RATED THERMAL POWER, after each fuel loading.

SR 3.1.3.2 Note 1 b. The MTC shall be measured at any THERMAL POWER and compared to the 300 ppm surveillance limit specified in the CORE OPERATING LIMITS REPORT (all rods withdrawn, RATED THERMAL POWER condition) within 7 EFPD after reaching an equilibrium boron concentration of 300 ppm. SR 3.1.3.2 Note 2 In the event this comparison indicated the MTC is more negative than the 300 ppm surveillance limit, the MTC shall be remeasured, and compared to the EOC MTC limit specified in the CORE OPERATING LIMITS REPORT, at least once per 14 EFPD during the remainder of the fuel cycle.(1)

lower A.4

SR 3.1.3.2 Note 3 (1) Once the equilibrium boron concentration (all rods withdrawn, RATED THERMAL POWER condition) is 60 ppm or less, further measurement of the MTC in accordance with 4.1.1.4.b may be suspended providing that the measured MTC at an equilibrium boron concentration of ≤ 60 ppm is less negative than the 60 ppm surveillance limit specified in the CORE OPERATING LIMITS REPORT.

ITS

A.1

REACTIVITY CONTROL SYSTEMS

MINIMUM TEMPERATURE FOR CRITICALITY

LIMITING CONDITION FOR OPERATION

LCO 3.4.2 3.1.1.5 The Reactor Coolant System lowest operating loop temperature, T_{avg}, shall be $\geq$ 541°F.

Appl. APPLICABILITY: MODES 1 and 2#.

ACTION:

Action A With a Reactor Coolant System operating loop temperature, T_{avg}, < 541°F, ~~restore T_{avg} to within its limit within 15 minutes or~~ be in ~~HOT STANDBY~~ MODE 2 with K_{eff} < 1.0 within ~~the next~~ ~~15~~ 30 minutes. A.2 A.3

SURVEILLANCE REQUIREMENTS

SR 3.4.2.1 4.1.1.5 The Reactor Coolant System temperature, T_{avg}, shall be determined to be $\geq$ 541°F:

a. ~~Within 15 minutes prior to achieving reactor criticality, and~~ L.1

b. ~~At least once per 30 minutes when the reactor is critical and the Reactor Coolant System T_{avg} is less than 547°F, with the T_{avg} - T_{ref} Deviation Alarm not reset.~~

Once per 12 hours

#With $K_{eff} \geq 1.0$.

CTS 3.1.2.1

REACTIVITY CONTROL SYSTEMS

3/4.1.2 BORATION SYSTEMS

FLOW PATHS - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.1 As a minimum, one of the following boron injection flow paths shall be OPERABLE:

a. A flow path from the boric acid tanks via a boric acid transfer pump through a charging pump to the Reactor Coolant System if only the boric acid storage tank in Specification 3.1.2.7a is OPERABLE, or

b. The flow path from the refueling water storage tank via a charging pump to the Reactor Coolant System if only the refueling water storage tank in Specification 3.1.2.7b is OPERABLE.

APPLICABILITY: MODES 5 and 6.

R.1

ACTION:

With none of the above flow paths OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes until at least one injection path is restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.1.2.1 At least one of the above required flow paths shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying that the temperature of the heat traced portion of the flow path is $\geq$ 115°F when a flow path from the boric acid tanks is used.

b. At least once per 31 days be 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.

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CTS 3.1.2.2

REACTIVITY CONTROL SYSTEMS

FLOW PATHS – OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.2 Each of the following boron injection flow paths shall be OPERABLE:

a. The flow path from the boric acid tanks via a boric acid transfer pump and a charging pump to the Reactor Coolant System, and

b. The flow path from the refueling water storage tank via a charging pump to the Reactor Coolant System.

APPLICABILITY: MODES 1, 2, 3 AND 4#.

ACTION:

a. With the flow path from the boric acid tanks inoperable, restore the inoperable flow path to OPERABLE status within 72 hours or be in at least HOT STANDBY and borated to a SHUTDOWN MARGIN equivalent to at least 1.77% $\Delta k/k$ at 200°F within the next 6 hours; restore the flow path to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.

b. With the flow path from the refueling water storage tank inoperable, restore the flow path to OPERABLE status within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

(R.1)

SURVEILLANCE REQUIREMENTS

4.1.2.2 Each of the above required flow paths shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying that the temperature of the heat traced portion of the flow path from the boric acid tanks is ≥ 115°F.

\# Only one boron injection flow path is required to be OPERABLE whenever the temperature of one or more of the RCS cold legs is less than or equal to 235°F.

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CTS 3.1.2.2

R.1

~~REACTIVITY CONTROL SYSTEMS~~

~~**SURVEILLANCE REQUIREMENTS (Continued)**~~

~~b. 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.~~

~~c. At least once per 18 months during shutdown by verifying that each automatic valve in the flow path actuates to its correct position on a safety injection test signal.~~

Rev 0

CTS 3.1.2.3

REACTIVITY CONTROL SYSTEMS

CHARGING PUMP – SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.3 One charging pump in the boron injection flow path required by Specification 3.1.2.1 shall be OPERABLE.

APPLICABILITY: MODES 5 and 6

ACTION:

a. With no charging pump OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes until one charging pump is restored to OPERABLE status.

b. With no charging pump OPERABLE and the opposite unit in MODE 1, 2, 3 or 4, immediately initiate corrective action to restore at least one charging pump to OPERABLE status as soon as possible.

R.1

SURVEILLANCE REQUIREMENTS

4.1.2.3.1 The above required charging pump shall be demonstrated OPERABLE by verifying, that on recirculation flow, the pump develops a discharge pressure of greater than or equal to 2410 psig when tested pursuant to Specification 4.0.5.

4.1.2.3.2 At least once per 12 hours, verify that a maximum of one charging pump is OPERABLE and capable of injecting into the RCS.*

* Two charging pumps may be OPERABLE and capable of injecting into the RCS during pump switching operations.

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CTS 3.1.2.4

07-24-96

REACTIVITY CONTROL SYSTEMS

CHARGING PUMPS – OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.4 At least two charging pumps shall be OPERABLE.

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

ACTION:

With only one charging pump OPERABLE, restore a second charging pump to OPERABLE status within 72 hours or be in at least HOT STANDBY and borated to a SHUTDOWN MARGIN equivalent to at least 1.77% $\Delta k/k$ at 200°F within the next 6 hours; restore a second charging pump to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours. The provisions of Specification 3.0.4 are not applicable for one hour following heatup above 235°F or prior to cooldown below 235°F.

R.1

SURVEILLANCE REQUIREMENTS

4.1.2.4.1 The above required charging pumps shall be demonstrated OPERABLE by verifying, that on recirculation flow, each pump develops a discharge pressure of greater than or equal to 2410 psig when tested pursuant to Specification 4.0.5.

4.1.2.4.2 At least once per 12 hours, verify that a maximum of one charging pump is OPERABLE and capable of injecting into the RCS whenever the temperature of one or more of the RCS cold legs is less than or equal to 235°F.**

* A maximum of one charging pump shall be OPERABLE and capable of injecting into the RCS whenever the temperature of one or more of the RCS cold legs is less than or equal to 235°F.

** Two charging pumps may be OPERABLE and capable of injecting into the RCS during pump switching operations.

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CTS 3.1.2.5

REACTIVITY CONTROL SYSTEMS

BORIC ACID TRANSFER PUMPS - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.5 At least one boric acid transfer pump shall be OPERABLE if only the flow path through the boric acid transfer pump of Specification 3.1.2.1a is OPERABLE.

APPLICABILITY: MODES 5 and 6.

ACTION:

With no boric acid transfer pump OPERABLE as required to complete the flow path of Specification 3.1.2.1a, suspend all operations involving CORE ALTERATIONS or positive reactivity changes until at least one boric acid transfer pump is restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.1.2.5 The above required boric acid transfer pump shall be demonstrated OPERABLE by verifying, that on recirculation flow, the pump develops a discharge pressure of $\geq$ 109 psig when tested pursuant to Specification 4.0.5.

R.1

CTS 3.1.2.6

11-26-77

R.1

REACTIVITY CONTROL SYSTEMS

BORIC ACID TRANSFER PUMPS - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.6 At least one boric acid transfer pump in the boron injection flow path required by Specification 3.1.2.2a shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With no boric acid transfer pump OPERABLE, restore at least one boric acid transfer pump to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and borated to a SHUTDOWN MARGIN equivalent to 1.77% Δk/k at 200°F; restore at least one boric acid transfer pump to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.

SURVEILLANCE REQUIREMENTS

4.1.2.6 The above required boric acid transfer pump shall be demonstrated OPERABLE by verifying that on recirculation flow the pump develops a discharge pressure of ≥ 109 psig when tested pursuant to Specification 4.0.5.

REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.7 As a minimum, one of the following borated water sources shall be OPERABLE:

a. A boric acid storage system and associated heat tracing with:

1. A minimum contained borated water volume of 1378 gallons,
2. Between 12,950 and 15,750 ppm of boron, and
3. A minimum solution temperature of 115°F.

b. The refueling water storage tank with:

1. A minimum contained borated water volume of 51,000 gallons,
2. Between 2300 and 2400 ppm of boron, and
3. A minimum solution temperature of 35°F.

APPLICABILITY: MODES 5 and 6.

R.1

ACTION:

With no borated water source OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes until at least one borated water source is restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.1.2.7 The above required borated water source shall be demonstrated OPERABLE:

a. At least once per 7 days by:

1. Verifying the boron concentration of the water,
2. Verifying the contained borated water volume of the tank, and
3. Verifying the boric acid storage tank solution temperature when it is the source of borated water.

b. At least once per 24 hours by verifying the RWST temperature when it is the source of borated water and the outside air temperature is < 35°F.

CTS 3.1.2.8

REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.8 Each of the following borated water sources shall be OPERABLE:

a. A boric acid storage system and associated heat tracing with:

1. A contained borated water volume of between 6000 and 16,280 gallons,
2. Between 12,950 and 15,750 ppm of boron, and
3. A minimum solution temperature of 115°F.

b. The refueling water storage tank with:

1. A contained borated water volume of between 466,200 and 487,000 gallons,
2. Between 2300 and 2400 ppm of boron, and
3. A solution temperature between 40°F and 50°F.

(R.1)

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With the boric acid storage system inoperable, restore the storage system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and borated to a SHUTDOWN MARGIN equivalent to at least 1.77% Δk/k at 200°F;
restore the boric acid storage system to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.

b. With the refueling water storage tank inoperable, restore the tank to OPERABLE status within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.1.2.8 Each borated water source shall be demonstrated OPERABLE:

REACTIVITY CONTROL SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

a. At least once per 7 days by:

1. Verifying the boron concentration in each water source, (R.1)

2. Verifying the contained borated water volume of each water source, and

3. Verifying the boric acid storage system solution temperature.

b. At least once per 24 hours by verifying the RWST temperature.

(A.1) ITS 3.1.4

ITS

REACTIVITY CONTROL SYSTEMS

3/4.1.3 MOVABLE CONTROL ASSEMBLIES

GROUP HEIGHT

LIMITING CONDITION FOR OPERATION

LCO 3.1.4 — 3.1.3.1 All shutdown and control rods shall be OPERABLE and positioned within ± 12 steps* of their group step counter demand position.

APPLICABILITY: MODES 1~~**~~ and 2~~**~~. (A.2)

ACTION: (L.1)

inoperable — provided in the COLR

Action A — a. With one or more rods ~~untrippable~~, ~~determine~~ within one hour that the SHUTDOWN MARGIN requirement ~~of Specification 3.1.1.1~~ is satisfied, and be in HOT STANDBY within 6 hours. Insert ITS ACTION A.1.2 (LA.1) (L.2)

Action D — b. With more than one rod misaligned from the group step counter demand position by more than the above alignment requirements, determine within one hour that the SHUTDOWN MARGIN requirement ~~of Specification 3.1.1.1~~ is satisfied, and be in HOT STANDBY within 6 hours. provided in the COLR — Insert Action D.1.2 (LA.1) (L.2)

c. With a maximum of one rod misaligned from the group step counter demand position by more than the above alignment requirements, POWER OPERATION may continue provided that within one hour, either:

~~1. The rod is restored to OPERABLE status within the above alignment requirements, or~~ (A.3)

Action B.1.1 — 2. ~~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: (L.1) (LA.1)

Action B.1.2 — provided in the COLR — Insert ACTION B.1.2 (L.2)

Action B.3 — a) A reevaluation of ~~each~~ the accident analysis ~~of Table 3.1-1~~ is performed within 5 days. This reevaluation shall confirm that the previous analyzed results of these accidents remain valid for the duration of operation under these conditions, and (L.3)

LCO 3.1.4 Note — * For power levels below 50% of RATED THERMAL POWER, the position of each rod as determined by its individual rod position indicator may be more than ± 12 steps from its group step counter demand position for a maximum of one hour in every 24. During this hour, the indicated position of each rod may be no more than ± 24 steps from its demand position. The ± 24 step/hour limit is not applicable when control rod position is known to be greater than 12 steps from the rod group step counter demand position indication.

~~** See Special Test Exceptions 3.10.2 and 3.10.3.~~ (A.2)

A.1

ITS 3.1.4

ITS

REACTIVITY CONTROL SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

provided in the COLR

Action B.1.1 b) The SHUTDOWN MARGIN requirement ~~of Specification 3.1.1.1~~ is determined at least once per 12 hours, and } LA.1

Action B.2.2.1 & B.2.2.2 c) A power distribution map is obtained from the movable incore detectors and $F_Q(Z)$ and $F^N_{\Delta H}$ are verified to be within ~~their~~ limits within 72 hours, or L.4

Action B.2.1 d) ~~Either~~ the THERMAL POWER ~~level~~ is reduced to ≤ 75% of RATED THERMAL POWER within ~~one~~ two hours ~~and within the next 4 hours the high neutron flux trip setpoint is reduced to ≤ 85% of RATED THERMAL POWER, or~~ L.5

~~e) The remainder of the rods in the group with the inoperable rod are aligned to within ± 12 steps of the inoperable rod within the hour while maintaining the thermal power, rod sequence, and insertion limits of Specification 3.1.3.6 during subsequent operation.~~ A.4

Action C Insert Action C M.1

SURVEILLANCE REQUIREMENTS

SR 3.1.4.1 4.1.3.1.1 The position of each 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.~~ L.8

SR 3.1.4.2 4.1.3.1.2 Each 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.

ITS 3.1.4

12-28-79

TABLE 3.1-1

ACCIDENT ANALYSES REQUIRING REEVALUATION IN THE EVENT OF AN INOPERABLE FULL LENGTH ROD

Rod Cluster Control Assembly Insertion Characteristics

Rod Cluster Control Assembly Misalignment

Loss of Reactor Coolant From Small Ruptured Pipes Or From Cracks In Large Pipes Which Actuates The Emergency Core Cooling System

Single Rod Cluster Control Assembly Withdrawal At Full Power

Major Reactor Coolant System Pipe Rupture (Loss of Coolant Accident)

Major Secondary System Pipe Rupture

Rupture of a Control Rod Drive Mechanism Housing (Rod Cluster Control Assembly Ejection)

L.3

A.1

ITS 3.1.7

REACTIVITY CONTROL SYSTEMS

POSITION INDICATOR CHANNELS - OPERATING

ITS

LIMITING CONDITION FOR OPERATION

and Demand Position Indication System

LCO 3.1.7

3.1.3.2 The shutdown and control rod position indicating system shall be OPERABLE ~~with~~: L.1

~~a. Each individual rod position indicator channel, 1 per rod, accurate to within ± 12 steps* of actual rod position, and~~ A.5

~~b. Each demand position indicator, 1 per group, accurate to within ± 2 steps of demand position, and~~ L.1

~~c. The Automatic Rod Position Deviation Monitor with the alarm setpoint < 12 steps.~~ L.2

APPLICABILITY: MODES 1 and 2.

L.5

ACTION: Insert proposed Action Note

Insert proposed Action B

A3

a. With a maximum of one individual rod position indicator channel per group inoperable, either:

within 4 hours

Action A.1

Action C.1

1. Determine the position of the non-indicating rod indirectly by the movable incore detectors at least once per 8 hours and ~~immediately~~ after any motion of the non-indicating rod which exceeds 24 steps in one direction since the last determination of the rod's position ~~as well as verify that the rod position requirements of Specification 3.1.3.1 are satisfied~~, or L.3 A.2

Action A.2 + C.2

2. Reduce THERMAL POWER to < 50% of RATED THERMAL POWER within 8 hours ~~and verify that the requirements of Specification 3.1.3.1 are satisfied.~~ A.2

b. With a maximum of one demand position indicator per bank inoperable, either:

by administrative means

Action D.1.1

Action D.1.2

1. Verify that all individual rod position indicators for the affected bank are OPERABLE and that the most withdrawn rod and the least withdrawn rod of the bank are within a maximum of 12 steps of each other at least once per 8 hours, or L.3

Action D.2

2. Reduce THERMAL POWER to < 50% of RATED THERMAL POWER within 8 hours ~~and verify that the requirements of Specification 3.1.3.1 are satisfied.~~ A.2

~~c. With the Automatic Rod Position Deviation Monitor inoperable, compare the demand position indicators and the individual rod position indicator channels at least once per 4 hours to ensure that rod position indication is within the above tolerance requirements. The provisions of Specification 3.0.4 are not applicable.~~ L.2

~~* Below 50% power each individual rod position indicator may be more than ± 12 steps from its group step-counter demand position for a maximum of one hour in every 24. During this hour, each individual rod position indicator may be no more than ± 24 steps from its demand position.~~ ~~If either the one hour period or the ± 24 step limit is exceeded, immediately declare the individual rod position indicator channel inoperable.~~ A.5 A.4

Insert proposed Action E M.1

Action D

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A.1

ITS 3.1.7

8-27-90

REACTIVITY CONTROL SYSTEMS

ITS

POSITION INDICATOR CHANNELS - OPERATING

SURVEILLANCE REQUIREMENTS

4.1.3.2.1 Each individual rod position indicator shall be determined to be OPERABLE by:

a. Performing a CHANNEL CHECK* by intercomparison of each individual rod position indicator and its corresponding demand position indicator at least once per 12 hours, and

SR 3.1.7.1

b. Performing a CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION at least once per 18 months.

L.4

4.1.3.2.2 Each demand position indicator shall be determined to be OPERABLE by:

a. Performing a CHANNEL CHECK of the demand position indicators within a bank at least once per 7 days, and

b. Performing a CHANNEL CHECK by an intercomparison of the control bank benchboard demand position indicators and the rod control system logic cabinet bank overlap indicator or the rod position indicator cabinet P/A indicators, and determining their agreement within ± 2 steps, at least once per 92 days.

L.1

4.1.3.2.3 The Automatic Rod Position Deviation Monitor shall be determined to be OPERABLE by performing a functional test of the process computer alarm to demonstrate the process computer remains capable of recognizing a deviation of 12 steps or more at least once per 7 days.

L.2

* Below 50% power each individual rod position indicator may be more than ± 12 steps from its group step counter demand position for a maximum of one hour in every 24. During this hour, each individual rod position indicator may be no more than ± 24 steps from its demand position. If either the one hour period or the ± 24 step limit is exceeded, immediately declare the individual rod position indicator channel inoperable. A scan frequency of approximately once per minute, by either the plant computer or a data acquisition system, is acceptable for determining the total time that a rod is position indicator has deviated more than ± 12 steps but no more than ± 24. A rod position indicator which is found to be so deviated is assumed to have been deviated for the entire scanning period. When the scanner is unavailable to sum deviated time, the tolerance reverts to ± 12 steps.

L.4

CTS 3.1.3.3

REACTIVITY CONTROL SYSTEMS

POSITION INDICATOR CHANNELS-SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.3.3 The rod group step counter demand position indicator shall be OPERABLE and accurate to within ± 2 steps of the demand position from the logic cabinet for each shutdown or control rod group not fully inserted.

APPLICABILITY: MODES 3* , 4* and 5* .

ACTION:

With less than the above required demand position indicators OPERABLE, open the reactor trip system breakers within 15 minutes.

R.1

SURVEILLANCE REQUIREMENTS

4.1.3.3 Each of the above required demand position indicators shall be determined to be OPERABLE by:

a. Performing a CHANNEL CHECK of the demand position indicators within a bank at least once per 7 days, and

b. Performing a CHANNEL CHECK by an intercomparison of the control bank benchboard demand position indicators and the rod control system logic cabinet bank overlap indicator or the rod position indicator cabinet D/A indicators, and determining their agreement within ± 2 steps, at least once per 92 days.

c. The provisions of Specification 4.0.4 are not applicable.

*With the reactor trip system breakers in the closed position.

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A.1

ITS 3.1.4

ITS

REACTIVITY CONTROL SYSTEMS

ROD DROP TIME

LIMITING CONDITION FOR OPERATION

fully

SR 3.1.4.3 3.1.3.4 The individual full length (shutdown and control) rod drop time from the ~~229 STEP~~ withdrawn position shall be ≤ ~~2.7~~ seconds from beginning of decay of stationary gripper coil voltage to dashpot entry with: L.9

a. $T_{avg} \geq 500°F$, and

b. All reactor coolant pumps operating.

APPLICABILITY: MODES 1 and 2.

ACTION:

~~a. With the drop time of any full length rod determined to exceed the above limit, restore the rod drop time to within the above limit prior to proceeding to MODE 1 or 2.~~ A.5

~~b. With the rod drop times within limits but determined with 2 reactor coolant pumps operating, operation may proceed provided THERMAL POWER is restricted to:~~

~~1. ≤ 66% of RATED THERMAL POWER when the reactor coolant stop valves in the nonoperating loop are open, or~~ A.6

~~2. ≤ 71% of RATED THERMAL POWER when the reactor coolant stop valves in the nonoperating loop are closed.~~

SURVEILLANCE REQUIREMENTS

4.1.3.4 The rod drop time of full length rods shall be demonstrated through measurement prior to reactor criticality:

SR 3.1.4.3 a. For all rods following each removal of the reactor vessel head,

~~b. For specifically affected individual rods following any maintenance on or modification to the control rod drive system which could affect the drop time of those specific rods, and~~ L.6

~~c. At least once per 18 months.~~ L.7

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(A.1) ITS 3.1.5

Insert Applicability Note (A.3)

ITS

REACTIVITY CONTROL SYSTEMS

SHUTDOWN ROD INSERTION LIMIT

LIMITING CONDITION FOR OPERATION

3.1.5 3.1.3.5 All shutdown rods shall be limited in physical insertion as specified in the CORE OPERATING LIMITS REPORT. (L.1)

Each ... bank

APPLICABILITY: MODES 1* and 2*# (A.2) (M.1)

ACTION:

Insert proposed Condition A (L.3)

a. ~~With a maximum of one shutdown rod inserted beyond the insertion limit specified in the CORE OPERATING LIMITS REPORT, except for surveillance testing pursuant to Specification 4.1.3.1.2, within one hour either:~~

1. ~~Restore the rod to within the insertion limit specified in the CORE OPERATING LIMITS REPORT, or~~ (L.1)

2. ~~Declare the rod to be misaligned and apply Specification 3.1.3.1~~

Condition B b. With a maximum of one shutdown bank inserted beyond the insertion limit specified in the CORE OPERATING LIMITS REPORT during surveillance testing pursuant to Specification 4.1.3.1.2 and immovable due to malfunctions in the rod control system, POWER OPERATION may continue provided that: (A.3)

Condition B 1. the shutdown bank is inserted no more than 18 steps below the insertion limit as measured by the group step counter demand position indicators,

Condition B 2. ~~the affected bank is trippable,~~ Each control and shutdown bank within the limits of LCO 3.1.4

3. ~~each shutdown and control rod is aligned to within ± 12 steps of its respective group step counter demand position,~~ (A.4)

Condition B 4. the insertion limits of Specification 3.1.3.6 are met for each control bank,

Action B.1 5. the SHUTDOWN MARGIN requirement of Specification 3.1.1.1 is determined to be met at least once per 12 hours, and

Action B.2 6. the shutdown bank is restored to within the insertion limit specified in the CORE OPERATING LIMITS REPORT within 72 hours.

Action C Otherwise, be in HOT STANDBY within the next 6 hours.

~~* See Special Test Exceptions 3.10.2 and 3.10.3~~

~~# With Keff ≥ 1.0~~ (A.2) (M.1)

A.1

ITS 3.1.5

ITS

SURVEILLANCE REQUIREMENTS

4.1.3.5 Each shutdown rod shall be determined to be within the insertion limit specified in the CORE OPERATING LIMITS REPORT

~~a. Within 15 minutes prior to initial control rod bank withdrawal during an approach to reactor criticality, and~~ L.2

SR 3.1.5.1 b. At least once per 12 hours ~~thereafter~~

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ITS

REACTIVITY CONTROL SYSTEMS

CONTROL ROD INSERTION LIMITS

LIMITING CONDITION FOR OPERATION

M.1 , sequence, and overlap limits

LCO 3.1.6 3.1.3.6 The control banks shall be limited in physical insertion as specified in the CORE OPERATING LIMITS REPORT.

APPLICABILITY: MODES 1~~*~~ and 2~~*#~~. A.2

Insert Applicability Note A.3

Action A ACTION: Insert Action A

For reasons other than Condition C A.1

a. With the control banks inserted beyond the insertion limits, ~~except for surveillance testing pursuant to Specification 4.1.3.1.2,~~ either: A3

Action B.2 1. Restore the control banks to within the insertion limits within two hours, or M.2

Insert Actions B.1.1 and B.1.2

~~2. Reduce THERMAL POWER within two hours to less than or equal to that fraction of RATED THERMAL POWER which is allowed by the rod group step counter demand position using the insertion limits specified in the CORE OPERATING LIMITS REPORT, or~~ A.6

Action D 3. Be in HOT STANDBY within 6 hours.

Condition C b. With a maximum of one control bank inserted beyond the insertion limit specified in the CORE OPERATING LIMITS REPORT ~~during surveillance testing pursuant to Specification 4.1.3.1.2~~ and immovable ~~due to malfunctions in the rod control system,~~ POWER OPERATION## may continue provided that: A3 A.4

Condition C 1. the control bank is inserted no more than 18 steps below the insertion limit as measured by the group step counter demand position indicators,

Condition C ~~2. the affected bank is trippable,~~

Each control and shutdown bank within the limits of LCO 3.1.4

~~3. each shutdown and control rod is aligned to within ± 12 steps of its respective group step counter demand position,~~ A.5

Condition C 4. the insertion limits of Specification 3.1.3.5 are met for each shutdown bank,

~~* See Special Test Exceptions 3.10.2 and 3.10.3.~~ A.2

Applicability ~~# With $K_{eff} \geq 1.0$.~~

Condition C ## Provision for continued POWER OPERATION does not apply to Control Bank D inserted beyond the insertion limit.

(A.1)

ITS 3.1.6

ITS

LIMITING CONDITION FOR OPERATION (cont'd.)

Action C.1

5. the SHUTDOWN MARGIN requirement of Specification 3.1.1.1 is determined to be met at least once per 12 hours, and

Action C.2

6. the control bank is restored to within the insertion limit specified in the CORE OPERATING LIMITS REPORT within 72 hours.

Action D

Otherwise, be in HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

SR 3.1.6.2

4.1.3.6 The position of each control bank shall be determined to be within the insertion limits at least once per 12 hours ~~except during time intervals when the Rod Insertion Limit Monitor is inoperable, then verify either the individual rod positions (indicated positions) or the group step counter demand position of each rod group to be within the insertion limits at least once per 4 hours.~~ (L.1)

SR 3.1.6.3

Insert proposed SR 3.1.6.3 (M.1)

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ITS 3.2.3

A.1

 6-7-91

AXIAL FLUX DIFFERENCE (AFD)

ITS

LIMITING CONDITION FOR OPERATION

3.2.3

3.2.1 The indicated AXIAL FLUX DIFFERENCE (AFD) shall be maintained within the limits specified in the CORE OPERATING LIMITS REPORT.

APPLICABILITY: MODE 1 ABOVE 50% RATED THERMAL POWER

ACTION:

Action A

a. With the indicated AXIAL FLUX DIFFERENCE outside of the limits specified in the CORE OPERATING LIMITS REPORT,

1. ~~Either restore the indicated AFD to within the limits within 15 minutes, or~~ A.2

2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 30 minutes ~~and reduce the Power Range Neutron Flux - High Trip setpoints to less than or equal to 55 percent of RATED THERMAL POWER within the next 4 hours.~~ L.1

b. ~~THERMAL POWER shall not be increased above 50% of RATED THERMAL POWER unless the indicated AFD is within the limits specified in the CORE OPERATING LIMITS REPORT.~~ A.3

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ITS 3.2.3

(A.1)

6-7-91

ITS

SURVEILLANCE REQUIREMENTS

SR 3.2.3.1

4.2.1.1 The indicated AXIAL FLUX DIFFERENCE shall be determined to be within its limits during POWER OPERATION above 50% of RATED THERMAL POWER by:

a. Monitoring the indicated AFD for each OPERABLE excore channel:

1. At least once per 7 days ~~when the AFD Monitor Alarm is OPERABLE, and~~

~~2. At least once per hour for the first 24 hours after restoring the AFD Monitor Alarm to OPERABLE status.~~

~~b. Monitoring and logging the indicated AXIAL FLUX DIFFERENCE for each OPERABLE excore channel at least once per hour for the first 24 hours and at least once per 30 minutes thereafter, when the AXIAL FLUX DIFFERENCE Monitor Alarm is inoperable. The logged values of the indicated AXIAL FLUX DIFFERENCE shall be assumed to exist during the interval preceding each logging.~~

(L.2)

LCO Note

4.2.1.2 The indicated AFD shall be considered outside of its limit when at least 2 OPERABLE excore channels are indicating the AFD to be outside of the limits specified in the CORE OPERATING LIMITS REPORT.

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(A.1)

ITS 3.2.1

6-7-91

HEAT FLUX HOT CHANNEL FACTOR-$F_Q(Z)$

ITS

LIMITING CONDITION FOR OPERATION

, as approximated by $F_Q^M(Z)$, shall be within the limits specified in the COLR.

LCO 3.2.1

3.2.2 $F_Q(Z)$ ~~shall be limited by the following relationships:~~

~~$F_Q(Z) \leq \left(\frac{CFQ}{P}\right)$ [K(Z)] for P > 0.5~~

~~$F_Q(Z) \leq \left(\frac{CFQ}{0.5}\right)$ [K(Z)] for P ≤ 0.5~~

~~where CFQ = the F_Q limit at RATED THERMAL POWER specified in the CORE OPERATING LIMITS REPORT,~~

~~$P = \frac{\text{THERMAL POWER}}{\text{RATED THERMAL POWER}}$, and~~

~~K(Z) = the normalized F_Q limit as a function of core height specified in the CORE OPERATING LIMITS REPORT.~~

(A.2)

APPLICABILITY: MODE 1.

(A.5)

ACTION: (M)

After each $F_Q^M(Z)$ determination,

With $F_Q(Z)$ exceeding its limit:

(A.3)

(L.1)

(LA.1)

Action A.2.1

Action A.2.2

Action A.2.3

a. Reduce THERMAL POWER at least 1% for each 1% $F_Q(Z)$ exceeds the limit within 15 minutes and similarly reduce the Power Range Neutron Flux-High Trip Setpoints within the next ~~4~~ 72 hours; POWER OPERATION may proceed for up to a total of 72 hours; subsequent POWER OPERATION may proceed provided the Overpower ΔT Trip Setpoint (value of K_4) has been reduced at least 1% (in ΔT span) for each 1% $F_Q(Z)$ exceeds the limit.

(L.2)

Action A.2.4

b. Identify and correct the cause of the out of limit condition prior to increasing THERMAL POWER above the reduced limit required by a. above; THERMAL POWER may then be increased provided $F_Q(Z)$ is demonstrated through incore mapping to be within its limits.

(M.1)

Insert Proposed Action B

A.1

ITS

SURVEILLANCE REQUIREMENTS

~~4.2.2.1 The provisions of Specification 4.0.4 are not applicable.~~ A.4

M 4.2.2.2 $F_Q^M(Z)$ shall be evaluated to determine if $F_Q(Z)$ is within its limit by: A.3

~~a. Using the movable incore detectors to obtain a power distribution map at any THERMAL POWER greater than 5% of RATED THERMAL POWER.~~ LA.2

~~b. Increasing the measured $F_Q(Z)$ component of the power distribution map by 3% to account for manufacturing tolerances and further increasing the value by 5% to account for measurement uncertainties.~~ LA.3

~~c. Satisfying the following relationship:~~

$$F_Q^M(z) \le \frac{CFQ \times K(z)}{P \times N(z)} \text{ for } P > 0.5$$

$$F_Q^M(z) \le \frac{CFQ \times K(z)}{N(z) \times 0.5} \text{ for } P \le 0.5$$

~~where $F_Q^M(z)$ is the measured $F_Q(Z)$ increased by the allowances for manufacturing tolerances and measurement uncertainty, and N(z) is the cycle dependent function that accounts for power distribution transients encountered during normal operation. This function is specified in the CORE OPERATING LIMITS REPORT as per Specification 6.9.1.7.~~ LA.4

SR 3.2.1.1 d. Measuring $F_Q^M(z)$ according to the following schedule:

SR 3.2.1.1 1st Frequency 1. Upon achieving equilibrium conditions after exceeding the THERMAL POWER at which $F_Q(Z)$ was last determined by 10% or more of RATED THERMAL POWER*, or

SR 3.2.1.1 2nd Frequency 2. At least once per 31 effective full power days, whichever occurs first.

or 3. Once after each refueling prior to THERMAL POWER exceeding 75% RTP M.3

SR 3.2.1.1 Note e. With measurements indicating

$$\underset{\text{over } z}{\text{maximum}} \left(\frac{F_Q^M(z)}{K(z)} \right)$$

has increased since the previous determination of $F_Q^M(z)$ either of the following actions shall be taken:

SR Note *During power escalation, the power level may be increased until a power level for extended operation has been achieved and a power distribution map obtained.

A.1

an appropriate factor

SR 3.2.1.1 Note 1. $F_Q^M(z)$ shall be increased by 2% over that specified in 4.2.2.2.c, or LA.7

SR 3.2.1.1 Note 2. $F_Q^M(z)$ shall be measured at least once per 7 effective full power days until 2 successive maps indicate that

$$\underset{\text{over } z}{\text{maximum}} \left(\frac{F_Q^M(z)}{K(z)} \right) \text{ is not increasing.}$$

~~f. With the relationships specified in 4.2.2.2.c above not being satisfied:~~

~~1. Calculate the percent $F_Q(Z)$ exceeds its limit by subtracting one from the measurement/limit ratio and multiplying by 100:~~

$$\left\{ \underset{\text{over } z}{\text{maximum}} \left(\frac{F_Q^M(z)}{\frac{CFQ \times K(z)}{P \times N(z)}} \right) - 1 \right\} \times 100 \text{ for } P \geq 0.5$$

LA.5

$$\left\{ \underset{\text{over } z}{\text{maximum}} \left(\frac{F_Q^M(z)}{\frac{CFQ \times K(z)}{0.5 \times N(z)}} \right) - 1 \right\} \times 100 \text{ for } P < 0.5$$

2. Either of the following actions shall be taken:

Action A.1

a. Power operation may continue provided the AFD limits of Specification 3.2.1 are reduced 1% AFD for each percent $F_Q(Z)$ exceeded its limits, or within 15 minutes M.2

b. Comply with the requirements of Specification 3.2.2 for $F_Q(Z)$ exceeding its limit by the percent calculated above.

~~g. The limits specified in 4.2.2.2.c, 4.2.2.2.e, and 4.2.2.2.f above are not applicable in the following core plane regions:~~ LA.6

~~1. Lower core region 0 to 15 percent inclusive.~~

~~2. Upper core region 85 to 100 percent inclusive.~~

~~4.2.2.3 When $F_Q(Z)$ is measured for reasons other than meeting the requirements of Specification 4.2.2.2, an overall measured $F_Q(Z)$ shall be obtained from a power distribution map and increased by 3% to account for manufacturing tolerances and further increased by 5% to account for measurement uncertainty.~~ LA.3

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(A.1)

ITS 3.2.2

6-7-91

NUCLEAR ENTHALPY HOT CHANNEL FACTOR - $F^N_{\Delta H}$

ITS

LIMITING CONDITION FOR OPERATION

LCO 3.2.2

3.2.3 $F^N_{\Delta H}$ shall be ~~limited by the following relationship:~~ within the limits specified in the COLR (LA.1)

~~$F^N_{\Delta H} \leq CFDH\ [1 + PFDH\ (1-P)]$~~

~~where CFDH = The $F^N_{\Delta H}$ limit at RATED THERMAL POWER specified in the CORE OPERATING LIMITS REPORT,~~

~~$P = \frac{\text{THERMAL POWER}}{\text{RATED THERMAL POWER}}$~~

~~PFDH = The Power Factor Multiplier for $F^N_{\Delta H}$ specified in the CORE OPERATING LIMITS REPORT, and~~

~~$F^N_{\Delta H}$ = measured value of $F^N_{\Delta H}$ obtained by using the movable incore detectors to obtain a power distribution map.~~ (LA.1)

APPLICABILITY: MODE 1

ACTION:

With $F^N_{\Delta H}$ exceeding its limit: Insert Proposed Condition A Note (M.1)

Action A.1 a. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within ~~2~~ 4 hours and reduce the Power Range Neutron Flux-High Trip Setpoints to ≤ 55% of RATED THERMAL POWER within ~~the next 4~~ 72 hours. (L.1)

Action A.2

Action A.3 b. Demonstrate through in-core mapping that $F^N_{\Delta H}$ is within its limit within 24 hours after exceeding the limit or reduce THERMAL POWER to less than 5% of RATED THERMAL POWER within the next ~~2~~ 6 hours, and (L.2)

Action B

c. ~~Identify and correct the cause of the out of limit condition prior to increasing THERMAL POWER above the reduced limit required by a or b, above; subsequent POWER OPERATION may proceed provided that $F^N_{\Delta H}$ is demonstrated through in-core mapping to be within its limit~~ (A.2) at a nominal 50% of RATED THERMAL POWER prior to exceeding this THERMAL POWER, at a nominal 75% of RATED THERMAL POWER prior to exceeding this THERMAL POWER and within 24 hours after attaining 95% or greater RATED THERMAL POWER.

Action A.4

Insert Proposed A.4 Note (A.3)

Perform SR 3.2.2.1 (A.2)

A.1

ITS 3.2.2

8-25-86

ITS

POWER DISTRIBUTION LIMITS

SURVEILLANCE REQUIREMENTS

SR 3.2.2.1

4.2.3.1 $F^N_{\Delta H}$ shall be determined to be within its limit ~~by using the movable incore detectors to obtain a power distribution map~~: A.4

a. Prior to operation above 75% of RATED THERMAL POWER after each fuel loading, and

b. At least once per 31 Effective Full Power Days.

~~c. The provisions of Specification 4.0.4 are not applicable.~~ A.5

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A.1

12-28-79

POWER DISTRIBUTION LIMITS

QUADRANT POWER TILT RATIO

ITS

LIMITING CONDITION FOR OPERATION

LCO 3.2.4

3.2.4 THE QUADRANT POWER TILT RATIO shall not exceed 1.02. A.2

APPLICABILITY: MODE 1 ABOVE 50% OF RATED THERMAL POWER~~*~~

ACTION:

Condition A

a. With the QUADRANT POWER TILT RATIO determined to exceed 1.02 ~~but ≤ 1.09~~: L.1

1. Within 2 hours: A.3

~~a) Either reduce the QUADRANT POWER TILT RATIO to within its limit, or~~

Action A.1

b) Reduce THERMAL POWER at least 3% from RATED THERMAL POWER for each 1% of indicated QUADRANT POWER TILT RATIO in excess of 1.0 ~~and similarly reduce the Power Range Neutron Flux-High Trip Setpoints within the next 4 hours.~~ L.3

~~2. Verify that the QUADRANT POWER TILT RATIO is within its limit within 24 hours after exceeding the limit or reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within the next 2 hours and reduce the Power Range Neutron Flux-High Trip setpoints to ≤ 55% of RATED THERMAL POWER within the next 4 hours.~~ L.4

~~3. Identify and correct the cause of the out of limit condition prior to increasing THERMAL POWER; subsequent POWER OPERATION above 50% of RATED THERMAL POWER may proceed provided that the QUADRANT POWER TILT RATIO is verified within its limit at least once per hour for 12 hours or until verified acceptable at 95% or greater RATED THERMAL POWER.~~ L.4

~~b. With the QUADRANT POWER TILT RATIO determined to exceed 1.09 due to misalignment of either a shutdown or control rod:~~

~~1. Reduce THERMAL POWER at least 3% from RATED THERMAL POWER for each 1% of indicated QUADRANT POWER TILT RATIO in excess of 1.0, within 30 minutes.~~ L.1

~~2. Verify that the QUADRANT POWER TILT RATIO is within its limit within 2 hours after exceeding the limit or~~

~~*See Special Test Exception 3.10.2.~~ A.2

new Insert Proposed Actions A.2, A.3, A.4, A.5, and A.6 M.1

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(A.1) ITS 3.2.4

1-7-82

ITS

POWER DISTRIBUTION Insert Proposed Action B (L.4)

LIMITING CONDITION FOR OPERATION (Continued)

~~reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within the next 2 hours and reduce the Power Range Neutron Flux-High Trip Setpoints to ≤ 55% of RATED THERMAL POWER within the next 4 hours.~~ (L.1)

~~3. Identify and correct the cause of the out of limit condition prior to increasing THERMAL POWER; subsequent POWER OPERATION above 50% of RATED THERMAL POWER may proceed provided that the QUADRANT POWER TILT RATIO is verified within its limit at least once per hour for 12 hours or until verified acceptable at 95% or greater RATED THERMAL POWER.~~

~~c. With the QUADRANT POWER TILT RATIO determined to exceed 1.09 due to causes other than the misalignment of either a shutdown or control rod:~~

~~1. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 2 hours and reduce the Power Range Neutron Flux-High Trip Setpoints to ≤ 55% of RATED THERMAL POWER within the next 4 hours.~~ (L.1)

~~2. Identify and correct the cause of the out of limit condition prior to increasing THERMAL POWER; subsequent POWER OPERATION above 50% of RATED THERMAL POWER may proceed provided that the QUADRANT POWER TILT RATIO is verified within its limit at least once per hour for 12 hours or until verified as 95% or greater RATED THERMAL POWER.~~

SURVEILLANCE REQUIREMENTS

4.2.4.1 The QUADRANT POWER TILT RATIO shall be determined to be within the limit above 50% of RATED THERMAL POWER by:

SR 3.2.4.1 ~~a.~~ Calculating the ratio at least once per 7 days ~~when the alarm is OPERABLE.~~ (L.2)

~~b. Calculating the ratio at least once per 12 hours during steady state operation when the alarm is inoperable.~~

SR 3.2.4.2 4.2.4.2 The QUADRANT POWER TILT RATIO shall be determined to be within the limit when above 75 percent of RATED THERMAL POWER with one Power Range Channel inoperable by using the moveable incore detectors to confirm ~~that the normalized symmetric power distribution, obtained from 2 sets of 4 symmetric thimble locations or a full-core flux map,~~ is consistent with the indicated QUADRANT POWER TILT RATIO at least once per 12 hours. (LA.1)

Insert Proposed SR 3.2.4.1 Note 2 (L.5)

ITS 3.4.1

A.1

ITS

POWER DISTRIBUTION LIMITS

DNB PARAMETERS

LIMITING CONDITION FOR OPERATION

LCO 3.4.1 3.2.5 The following DNB related parameters shall be maintained within the limits shown on Table 3.2-1:

a. Reactor Coolant System T_{avg}

b. Pressurizer Pressure

c. Reactor Coolant System Total Flow Rate

Appl APPLICABILITY: MODE 1

ACTION:

Action A Action B With any of the above parameters exceeding its limit, restore the parameter to within its limit within 2 hours or reduce THERMAL POWER to less than 5% of RATED THERMAL POWER within the next 4 hours.

SURVEILLANCE REQUIREMENTS

SR 3.4.1.1 SR 3.4.1.2 4.2.5.1 Each of the parameters of Table 3.2-1 shall be verified to be within their limits at least once per 12 hours.

SR 3.4.1.3 SR 3.4.1.4 4.2.5.2 The Reactor Coolant System total flow rate shall be determined to be within its limit by measurement at least once per 18 months.

ITS

TABLE 3.2-1

DNB PARAMETERS

LCO 3.4.1
LCO 3.4.1
LCO 3.4.1

PARAMETER	3 Loops in Operation	LIMITS: ~~2 Loops in Operation ** & Loop Stop Valves Open~~	LIMITS: ~~2 Loops in Operation ** & Isolated Loop Stop Valves Closed~~
Reactor Coolant System T_{avg}	~~≤ 591°F~~ ≤ the limit specified in the COLR		
Pressurizer Pressure	~~≥ 2205 psig*~~ ≥ the limit specified in the COLR		
Reactor Coolant System Total Flow Rate	≥ 295,000 gpm and ≥ the limit specified in the COLR		

LA.1

A.1

Applicability Note

* Limit not applicable during either a THERMAL POWER ramp increase in excess of 5% RATED THERMAL POWER per minute or a THERMAL POWER step increase in excess of 10% RATED THERMAL POWER.

~~** Values dependent on NRC approval of ECCS evaluation for these conditions.~~

A.2

06-05-96

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ITS 3.4.1

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A.1

03-09-00

ITS 3.3
3.3.1

3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.1

3.3.1.1 **(Risk-Informed)** As a minimum, the reactor trip system instrumentation channels and interlocks of Table 3.3-1 shall be OPERABLE.

APPLICABILITY: As shown in Table 3.3-1.

ACTION: INSERT PROPOSED Note A.2

Action A

~~As shown in Table 3.3-1.~~ INSERT PROPOSED Action A A.3

SURVEILLANCE REQUIREMENTS

SRs 3.3.1.1 → 3.3.1.15

4.3.1.1.1 Each reactor trip system instrumentation channel, interlock, and the automatic trip logic shall be demonstrated OPERABLE by the performance of the Reactor Trip System Instrumentation Surveillance Requirements specified in Table 4.3-1. A4

SR 3.3.1.16

Proposed Note A.7

4.3.1.1.2 The REACTOR TRIP SYSTEM RESPONSE TIME of each reactor trip function shall be demonstrated to be within its limit at least once per 18 months on a STAGGERED TEST BASIS. L.20 ~~Neutron detectors are exempt from response time testing.~~ A.1 ~~Response of the neutron flux signal portion of the channel time shall be measured from the detector output or input of the first electronic component in the channel.~~ LA.1 ~~Each test shall include at least one logic train such that both logic trains are tested at least once per 36 months~~ A.7 ~~and one channel per function such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip function as shown in the "Total No. of Channels" column of Table 3.3-1.~~ LA.1

A.1

TABLE 3.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION

A.5

ITS	FUNCTIONAL UNIT	Required ~~TOTAL NO. OF~~ CHANNELS	CHANNELS TO TRIP	~~MINIMUM CHANNELS OPERABLE~~	APPLICABLE MODES or other Specified Conditions	Conditions ~~ACTION~~
1.	1. Manual Reactor Trip	2	1	2	1, 2 A.1	~~12~~ B A.1
		2	1	2	Proposed Note a 3, 4, and 5	~~13~~ C L.1
2.	2. Power Range, Neutron Flux High A.1	4	2 A.21	3	1, 2	~~2~~ A.12 D M.2
	Low	4			1, 2	E A.21
3a	3. Power Range, Neutron Flux High Positive Rate	4	2	3	1, 2	~~2~~ A.12 E M.2
3b	4. Power Range, Neutron Flux, High Negative Rate	4	2	3	1, 2	~~2~~ A.12 E M.2
4	5. Intermediate Range, Neutron Flux	2	1	2	A.1 Proposed Note b 1, 2 A.10 Proposed Note c	~~3~~ F M.3 L.4 G L.5
5	6. Source Range, Neutron Flux					
	A. Startup	2	1	2	Proposed Note d LA.2 2 A.1	~~4~~ H M.4 I M.5
	B. Shutdown	2	1	2	Proposed Note a 3, 4 and 5	~~5~~ I M.5 J L.18
	C. Shutdown	~~2~~ 1 A.15	0	1	A.15 Proposed note e 3, 4 and 5	~~8~~ K M.6
6	7. Overtemperature ΔT	3	2	2	1, 2	~~7~~ A.12 E A.17

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ITS 3.3.1

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A.1

TABLE 3.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION

	FUNCTIONAL UNIT	Required ~~TOTAL NO. OF~~ CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES or other Specified Condition	Condition ~~ACTION~~	A.5
7	8. Overpower ΔT	3	2	2	1, 2	7	E A.17
8a	9. Pressurizer Pressure – Low	3	2	2	Proposed Note f 1, ~~2~~ A.9	8	L A.9
8b	10. Pressurizer Pressure – High	3	2	2	1, 2	8	E A.17
9	11. Pressurizer Water Level – High	3	2	2	Proposed Note f 1, ~~2~~ A.9	8	L A.9
10	12. Loss of Flow – (Above P-7)	3/loop	2/loop in any loop > P-8 2/loop in any 2 loops > P-7	2/loop in each loop	1 A.9 Proposed Note f	8	L A.9
	13. Deleted						
14	14. Steam Generator Water Level – Low-Low	3/loop	2/loop	2/loop	1, 2	8	E A.17
15	15. Steam/Feedwater Flow Mismatch and Low Steam Generator Water Level	2/loop-level and 2/loop-flow mismatch	1/loop-level coincident with 1/loop-flow mismatch in same loop	1/loop level and 2/loop-flow mismatch or 2/loop-level and 1/loop-flow mismatch	1, 2	8	E A.17

A.12

ITS

NORTH ANNA - UNIT 1

(A.1)

TABLE 3.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION

(A.5)

ITS	FUNCTIONAL UNIT	Required ~~TOTAL NO. OF CHANNELS~~	~~CHANNELS TO TRIP~~	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES or other specified conditions	Condition ~~ACTION~~
12	16. Undervoltage – Reactor Coolant Pump Busses	3 – 1/bus	2	2	Proposed Note f 1 (A.9)	~~8~~ L (A.9)
13.	17. Underfrequency – Reactor Coolant Pump Busses	3 – 1/bus	2	2	Proposed Note f 1 (A.9)	~~8~~ L (A.9)
16	18. Turbine Trip					
16a	A. Low Auto Stop Oil Pressure	3	2	2	Proposed Note f 1 (A.9)	~~9~~ N (A.22)
16b	B. Turbine Stop Valve Closure	4	4	3	Proposed Note f 1 (A.9)	~~9~~ N (A.22)
17	19. Safety Injection Input from ESF	2	1	2	1, 2	~~16~~ O (A.1)
11	20. Reactor Coolant Pump Breaker Position Trip Above P-7	1/breaker	1 > P-8 2 > P-7	1/breaker	Proposed Note f 1 (A.9)	~~8~~ M (A.27) (A.12)
						P (L.13)
19	21. A. Reactor Trip Breakers	2	1	2	1, 2	~~1, 14~~ (A.19)
		2	1	2	Proposed Note a (L.1) 3*, 4*, 5*	~~15~~ C (L.1)
20 Note h	RTB Undervoltage and Shunt Trip Mech.	1/RTB (A.19)			1, 2, 3(a), 4(a), 5(a)	S C (A.19)
	B. Reactor Trip Bypass Breakers (A.18)	2	1	1	~~***~~	~~13~~ (A.18)
21	22. Automatic Trip Logic	2	1	2	1, 2	~~16~~ O (A.1)
		2	1	2	Proposed Note a (L.1) 3*, 4*, 5*	~~15~~ C (L.1)

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A.1

TABLE 3.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION

A.5

ITS	FUNCTIONAL UNIT	Required ~~TOTAL NO. OF CHANNELS~~	~~CHANNELS TO TRIP~~	~~MINIMUM CHANNELS OPERABLE~~	APPLICABLE MODES or other specified conditions	Condition ~~ACTION~~	
18	23. Reactor Trip System Interlocks						
18a	A. Intermediate Range Neutron Flux, P-6	2	~~1~~	~~2~~	Proposed Noted ~~2~~ A.1	Q	A.16
18b	B. Low Power Reactor Trips Block, P-7	1/train					
	P-10 Input	~~4~~ A.20	~~2~~	~~3~~	1	R	A.16
	or						
	P-13 Input	~~2~~	~~1~~	~~2~~	1	R	A.16
18c	C. Power Range Neutron Flux, P-8	4	~~2~~	~~3~~	1	R	A.16
18d	D. Power Range Neutron Flux, P-10	4	~~2~~	~~3~~	1,2	Q	A.16
18e	E. Turbine Impulse Chamber Pressure, P-13	2	~~1~~	~~2~~	1	R	A.16

A.12

TABLE 3.3-1 (Continued)

TABLE NOTATION

ITS

Note a
* With the reactor trip system breakers in the closed position and the control rod drive system capable of rod withdrawal. or one or more rods not fully inserted L.1

Note d
** Below the P-6 (Intermediate Range Neutron Flux) setpoint.

Note h
*** ~~With the Reactor Trip Breaker open for surveillance testing in accordance with Specification Table 4.3-1 (item 21A).~~ INSERT PROPOSED NOTE h A.18

\# ~~The provisions of Specification 3.0.4 are not applicable.~~ A.12

\#\# ~~High voltage to detector may be de-energized above the P-6 setpoint.~~ LA.2

Note b
\#\#\# Below the P-10 (Low Setpoint Power Range Neutron Flux Interlock) setpoint.

Note c
INSERT PROPOSED NOTE C A.1

Note e
INSERT PROPOSED NOTE E A.15

Note f
INSERT PROPOSED NOTE F A.9

Note g
INSERT PROPOSED NOTE g A.22

ACTION STATEMENTS

Action P
ACTION 1 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, ~~be in HOT STANDBY within 6 hours;~~ INSERT PROPOSED REQUIRED ACTION P.1 L.13 however, one channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.1.1.1 provided the other channel is OPERABLE. Note 1

Note 2
One channel may be bypassed for up to 4 hours for concurrent surveillance testing of the reactor trip breaker and automatic trip logic, provided the other channel is OPERABLE.

Action D
Action E
ACTION 2 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and POWER OPERATION may proceed provided the following conditions are satisfied:

a. The inoperable channel is placed in the tripped condition within 72 hours.

b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 12 hours for surveillance testing of the redundant channel(s) per Specification 4.3.1.1.1. Note

c. Either, THERMAL POWER is restricted to ≤ 75% of RATED THERMAL POWER ~~and the Power Range Neutron Flux trip setpoint is reduced to ≤ 85% of RATED THERMAL POWER~~ within 78 hours; or, the QUADRANT POWER TILT RATIO is monitored at least once per 12 hours. L.2

Note to Required Action D.2.2
INSERT PROPOSED Note to Required Action D.2.2 L.3

d. ~~The QUADRANT POWER TILT RATIO shall be determined to be within the limit when above 75 percent of RATED THERMAL POWER with one Power Range Channel inoperable by using the moveable incore detectors to confirm that the normalized symmetric power distribution, obtained from 2 sets of 4 symmetric thimble locations or a full-core flux map, is consistent with the indicated QUADRANT POWER TILT RATIO at least once per 12 hours.~~ A.13

Required Actions D.3 and E.2
INSERT PROPOSED Required Actions D.3 and E.2 M.2

Action F
ACTION 3 - With the number of channels OPERABLE one less than ~~required by the~~ Minimum Channels OPERABLE requirement and with the THERMAL POWER level:

Action G
INSERT PROPOSED Action G L.5

TABLE 3.3-1 (Continued)

Action F

a. ~~Below the P-6 setpoint, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above the P-6 setpoint.~~ A.1

b. Above the P-6 setpoint, but below the P-10 setpoint, restore the inoperable channel to OPERABLE status ~~prior to increasing THERMAL POWER above the P-10 setpoint.~~ L.4

within 24 hours increase power above P-10 or decrease power below P-6 M.3

c. ~~Above the P-10 setpoint, POWER OPERATION may continue.~~ A.1

Action H

~~ACTION 4 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement and with the THERMAL POWER level:~~

Insert Proposed Required Action H.1 M.4

~~a. Below the P-6 setpoint, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above the P-6 setpoint.~~

b. ~~Above the P-6 setpoint, operation may continue.~~ A.1

Action K

ACTION 5 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, verify compliance with the SHUTDOWN MARGIN requirements of Specification 3.1.1.1 or 3.1.1.2, as applicable, within 1 hour and at least once per 12 hours thereafter.

Insert Proposed Required Action K.1 M.6

ACTION 6 - Not applicable.

Action E

ACTION 7 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and POWER OPERATION may proceed provided the following conditions are satisfied:

a. The inoperable channel is placed in the tripped condition within 72 hours.

NOTE b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels per Specification 4.3.1.1.

If the conditions are not satisfied in the time permitted, place the unit in HOT STANDBY in 6 hours. ~~HOT SHUTDOWN within the next 6 hours and COLD SHUTDOWN in the following 30 hours.~~ A.17

Actions L and M

ACTION 8 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and POWER OPERATION may proceed provided the following conditions are satisfied: A.27

a. The inoperable channel is placed in the tripped condition within 72 hours.

Note b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels per Specification 4.3.1.1.

If the conditions are not satisfied in the time permitted, reduce power to less than the P-7 setpoint in 6 hours.

Action I

INSERT PROPOSED ACTION I M.5

A.1

ITS

TABLE 3.3-1 (Continued)

Action N	ACTION 9 -	With the number of channels OPERABLE less than the Total Number of Channels OPERABLE requirement. STARTUP and POWER OPERATION may proceed provided the inoperable channel is placed in the tripped condition within 72 hours and the Minimum Channels OPERABLE requirement is met, or reduce power to less than the P-8 setpoint in the next 4 hours.
	ACTION 10 -	Deleted
	ACTION 11 -	~~With less than the Minimum Number of Channels OPERABLE, operation may continue provided the inoperable channel is placed in the tripped condition within 1 hour.~~ A.8
Action B	ACTION 12 -	With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in HOT STANDBY within the next 6 hours.
	ACTION 13 -	~~With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within (1) hour or terminate testing of the Reactor Trip Breaker and open the Reactor Trip Bypass Breaker.~~ A.18
Action S Note 2 Action P	ACTION 14 -	With one of the diverse trip features (undervoltage or shunt trip device) inoperable, restore it to OPERABLE status within 48 hours or declare the breaker inoperable and ~~apply Action 1~~. ~~The breaker shall not be bypassed while one of the diverse trip features is inoperable except for the time required for performing maintenance to restore the breaker to OPERABLE status.~~ Insert Required Actions A.9 A.26
Actions C and J	ACTION 15 -	With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement restore the inoperable channel to OPERABLE status within 48 hours or ~~open the reactor trip breakers~~ within the next hour. INSERT Proposed Required Action C.2 INSERT proposed Required Action J.2 L.1
Action O	ACTION 16 -	With the number of channels OPERABLE one less that required by the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.1.1, provided the other channel is OPERABLE. Note L.18
Actions Q and R	ACTION 17 -	With less than the Minimum Channels OPERABLE, within 1 hour determine ~~by observation of the associated permissive annunciator window(s)~~ that the interlock(s) is in its required state for the existing plant conditions or ~~apply Specification 3.0.3~~ INSERT PROPOSED REQUIRED ACTIONS Q.2 and R.2 LA.6 A.16

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A.1

TABLE 3.3-1 (CONTINUED)

REACTOR TRIP SYSTEM INTERLOCKS

ITS	DESIGNATION	CONDITION	SETPOINT	ALLOWABLE VALUES	FUNCTION
19a	P-6	1 of 2 Intermediate range above setpoint (increasing power level)	~~1 x 10^-10^~~	~~< 3 x 10^-10^~~ L.14	~~Allows manual block of source range reactor trip~~
		2 of 2 Intermediate range below setpoint (decreasing power level)	~~5 x 10^-11^~~	≥ 3 x 10^-11^	~~Defeats the block of source range reactor trip~~
18d	P-10	~~2 of 4 Power range above setpoint (increasing power level)~~	~~10%~~	≤ 11%	~~Allows manual block of power range (low setpoint) and intermediate range reactor trips and intermediate range rod stop. Blocks source range reactor trip.~~
		~~3 of 4 Power range below setpoint (decreasing power level)~~	~~8%~~	≥ 7% L.8	~~Defeats the block of power range (low setpoint) and intermediate range reactor trips and intermediate range rod stop.~~
					~~Input to P-7.~~
18b	P-7 P-10 A.1	~~2 of 4 Power range above setpoint~~	~~10%~~ LA.11	< 11%	~~Allows reactor trip when any of the following occur in more than one loop: low flow, reactor coolant pump breaker open, undervoltage (RCP busses) or underfrequency (RCP busses). Also allows reactor trip on: pressurizer low pressure or pressurizer high level.~~ LA.3
		~~or~~			
18c	P-13	~~1 of 2 Turbine Impulse chamber pressure above setpoint~~	~~Pressure equivalent to 10% rated turbine power~~ LA.3	≤ 11%	
		~~(Power level increasing)~~ LA.3			

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TABLE 3.3-1 (Continued)

REACTOR TRIP SYSTEM INTERLOCKS

	DESIGNATION	CONDITION	SETPOINT	ALLOWABLE VALUES	FUNCTION
18.b	P-7 (Cont'd) P-10 A.1 P-13	~~3 of 4 Power range below setpoint and~~ ~~2 of 2 Turbine Impulse chamber pressure below setpoint~~ ~~(Power level decreasing)~~	~~8%~~ ~~8%~~	L.8 ≥ 7% ~~>7%~~ L.14	~~Prevents reactor trip when any of the following occur: low flow, reactor coolant pump breakers open, undervoltage (RCP busses), underfrequency (RCP busses), pressurizer low pressure or pressurizer high level.~~
18c	P-8	~~2 of 4 Power range above setpoint~~ ~~(Power level increasing)~~	~~30%~~	L.8 ≤ 31%	~~Allows reactor trip when any of the following occur: low flow in a single loop, a single reactor coolant pump breaker open, or a turbine trip.~~
		~~3 of 4 Power range below setpoint~~ ~~(Power level decreasing)~~	~~28%~~	~~>27%~~ L.14	~~Prevents reactor trip when any of the following occur: low flow in a single loop, a single reactor coolant pump breaker open, or a turbine trip.~~
		LA.3	LA.11		LA.3

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07-1?-8?

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ITS 3.3.2

(A.1)

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A.1

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

ITS	FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	~~CHANNEL FUNCTIONAL TEST~~ COT TADOT (A.11)	MODES IN WHICH SURVEILLANCE REQUIRED (A.5)	Response Time Test (A.7)
1	1. Manual Reactor Trip	N.A.	N.A.	~~R(8)~~ (A.4) 3.3.1.14 (A.11)	1, 2 and*	N/A (L.20)
2	2. Power Range, Neutron Flux					
2a	A. High Setpoint	~~S~~ 3.3.1.1 (A.1)	~~D(2)(6)~~, M(3)(6) and R(6) 3.3.1.2 (L.15) (L.9) (L.16) 3.3.1.11 (A.1)	~~Q~~ 3.3.1.7 (A.11)	1, 2	3.3.1.16
2b	B. Low Setpoint	~~S~~ 3.3.1.1 (A.1)	~~R(6)~~ 3.3.1.11 (A.1)	~~S/U(1)~~ 3.3.1.8 (L.6)	1***, 2	3.3.1.16
3a	3. Power Range, Neutron Flux, High Positive Rate	N.A.	~~R(6)~~ 3.3.1.11 (A.1)	~~Q~~ 3.3.1.7 (A.11)	1, 2	N/A (L.20)
3b	4. Power Range, Neutron Flux, High Negative Rate	N.A.	~~R(6)~~ 3.3.1.11	~~Q~~ 3.3.1.7 (A.11)	1, 2	3.3.1.16
4	5. Intermediate Range, Neutron Flux	a. ~~S~~ 3.3.1.1 (A.1) b. ~~O(12)~~ (A.10)	~~R(6, 13)~~ 3.3.1.11 (M.8) (LA.13) N.A.	S/U(1), ~~O(12)~~ 3.3.1.8 (L.6) N.A.	1***, 2 3*, 4*, 5*	N/A (L.20)
5	6. Source Range, Neutron Flux	~~S~~ 3.3.1.1 (A.1) (A.5)	~~R(6)~~ 3.3.1.11 (A.1)	~~S/U(1)~~, ~~O(11)~~ 3.3.1.7 (A.11) 3.3.1.8 (L.17)	2, 3, 4, 5	3.3.1.16
6	7. Overtemperature ΔT	~~S~~ 3.3.1.1 (A.1)	~~R(6)~~ 3.3.1.12 (A.1)	~~Q~~ 3.3.1.6 3.3.1.7 3.3.1.3 (A.11) (L.9) (L.16)	1, 2	3.3.1.16
7	8. Overpower ΔT	~~S~~ 3.3.1.1 (A.1)	~~R(6)~~ 3.3.1.12 (A.1)	~~Q~~ 3.3.1.7 (A.11)	1, 2	N/A (L.20)
8a	9. Pressurizer Pressure – Low	~~S~~ 3.3.1.1 (A.1)	~~R~~ 3.3.1.10 (A.1)	~~Q~~ 3.3.1.7 (A.11)	1, 2	3.3.1.16
8b	10. Pressurizer Pressure – High	~~S~~ 3.3.1.1 (A.1)	~~R~~ 3.3.1.10 (A.1)	~~Q~~ 3.3.1.7 (A.11)	1, 2	3.3.1.16
9	11. Pressurizer Water Level – High	~~S~~ 3.3.1.1 (A.1)	~~R~~ 3.3.1.10 (A.1)	~~Q~~ 3.3.1.7 (A.11)	1, 2	3.3.1.16
10	12. Loss of Flow	~~S~~ 3.3.1.1 (A.1)	~~R~~ 3.3.1.10 (A.1)	~~Q~~ 3.3.1.7 (A.11)	1	3.3.1.16

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TABLE 4.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

ITS	FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST (A.11) COT TADOT	MODES IN WHICH SURVEILLANCE REQUIRED	Response Time Test (A.5) A.7
	13. Deleted					—
14	14. Steam Generator Water Level – Low-Low	~~S~~ 3.3.1.1 A.1	~~R~~ 3.3.1.10 A.1	~~Q~~ 3.3.1.7 A.11	~~1, 2~~	3.3.1.16
15	15. Steam/Feedwater Flow Mismatch and Low Steam Generator Water Level	~~S~~ 3.3.1.1 A.1	~~R~~ 3.3.1.10 A.1	~~Q~~ 3.3.1.7 A.11	~~1, 2~~	N/A L.20
12	16. Undervoltage – Reactor Coolant Pump Busses	N.A.	~~R~~ 3.3.1.10 A.1	~~N.A.~~ 3.3.1.9 M.1	~~1~~	3.3.1.16
13	17. Underfrequency – Reactor Coolant Pump Busses	N.A.	~~R~~ 3.3.1.10 A.1	N.A.	~~1~~	3.3.1.16
16	18. Turbine Trip					
16a	A. Low Auto Stop Oil Pressure	N.A.	~~N.A.~~ 3.3.1.10 M.7	~~S/U(1)~~ 3.3.1.15 A.25	~~1, 2~~	N/A L.20
16b	B. Turbine Stop Valve Closure	N.A.	~~N.A.~~ 3.3.1.10 M.7	~~S/U(1)~~ 3.3.1.15 A.25	~~1, 2~~	N/A
17	19. Safety Injection Input from ESF	N.A.	N.A.	A.14 ~~M(4) & R~~ 3.3.1.14 A.23	~~1, 2~~	N/A
11	20. Reactor Coolant Pump Breaker Position Trip	N.A.	N.A.	~~R~~ 3.3.1.14 A.11	~~N.A.~~	N/A
19	21. A. Reactor Trip Breaker	N.A.	N.A.	3.3.1.4 A.11 ~~M(5), (9) & R(10)~~ A.23 A.11	~~1, 2, & *~~	N/A
	~~B. Reactor Trip Bypass Breaker~~	~~N.A.~~	~~N.A.~~	~~M(5), (9), & R(10)~~ A.18	~~1, 2, & *~~	N/A
20	RTB Undervoltage and Shunt Trip Mech	N/A	NA	3.3.1.4 A.19		N/A
21	22. Automatic Trip Logic	N.A.	N.A.	A.11 ~~M(5)~~ 3.3.1.5 A.23	~~1, 2, & *~~	N/A

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A.1

TABLE 4.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

ITS	FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	~~CHANNEL FUNCTIONAL TEST~~ A.11 COT TADOT	~~MODES IN WHICH SURVEILLANCE REQUIRED~~ A.5
18	23. Reactor Trip System Interlocks				
18a	A. Intermediate Range Neutron Flux, P-6	N.A.	3.3.1.11 ~~R(11)~~ A.1	3.3.1.13 ~~R~~ A.11	~~2(7)~~
18b	B. Low Power Reactor Trips Block, P-7	N.A.	3.3.1.11 ~~R(11)~~ A.1	3.3.1.13 ~~R~~ A.11	~~1~~
18c	C. Power Range Neutron Flux, P-8	N.A.	3.3.1.11 ~~R(11)~~ A.1	3.3.1.13 ~~R~~ A.11	~~1~~
18d	D. Power Range Neutron Flux, P-10	N.A.	3.3.1.11 ~~R(11)~~ A.1	3.3.1.13 ~~R~~ A.11	~~1, 2~~
18e	E. Turbine Impulse Chamber Pressure, P-13	N.A.	3.3.1.11 ~~R~~ A.1	3.3.1.13 ~~R~~ A.11	~~1~~

TABLE 4.3-1 (Continued)

ITS

NOTATION

	* -	With the reactor trip system breakers closed and the control rod drive system capable of rod withdrawal.	A.5
	*** -	Below the P-10 (Low Setpoint Power Range Neutron Flux Interlock) setpoint.	A.5
Note SR3.3.1.8	(1) -	If not performed in previous 31 days. 92 day for SR 3.3.1.7 and SR 3.3.1.8	L.11 L.2
SR3.3.1.15 Note SR 3.3.1.2	(2) -	Heat balance only, above 15% of RATED THERMAL POWER. <INSERT PROPOSED NOTE>	L.15
Note SR 3.3.1.3	(3) -	Compare incore to excore axial offset above 15% of RATED THERMAL POWER. Adjust channel if absolute difference ≥ 3 percent. <INSERT PROPOSED NOTE>	L.9
Note SR 3.3.1.14	(4) -	Manual ESF functional input check every 18 months.	A.14
Frequency SR 3.3.1.4 SR 3.3.1.5	(5) -	Each train or logic channel shall be tested at least every ~~62~~ 31 days on a STAGGERED TEST BASIS.	A.23
Note SR 3.3.1.11	(6) -	Neutron detectors may be excluded from CHANNEL CALIBRATION.	
	(7) -	Below the P-6 (Intermediate Range Neutron Flux Interlock) setpoint.	A.5
TADOT	(8) -	The CHANNEL FUNCTIONAL TEST shall independently verify the OPERABILITY of the undervoltage and shunt trip circuits for the Manual Reactor Trip Function. The test shall also verify the OPERABILITY of the Bypass Breaker trip circuit(s).	A.11 LA.4
	(9) -	Local manual shunt trip the reactor trip bypass breaker immediately after placing the bypass breaker into service, but prior to commencing reactor trip system testing or reactor trip breaker maintenance.	LA.12
	(10) -	Automatic undervoltage trip.	LA.4
TADOT	(11) -	The CHANNEL FUNCTIONAL TEST shall independently verify the OPERABILITY of the undervoltage and shunt trip attachments of the Reactor Trip Breakers.	A.11 LA.4
SR3.3.1.8 Note SR3.3.1.8	(12) -	Quarterly Surveillance in Modes 3*, 4* and 5* shall also include verification that Permissives P-6 and P-10 are in their required state for existing plant conditions by observation of the permissive annunciator window.	L.10 LA.6
	(13) -	Detector plateau curves shall be obtained and evaluated. The provisions of Specification 4.0.4 are not applicable for entry into Mode 2 or 1.	LA.13 M.8

ITS

3.3

3.3.2

INSTRUMENTATION

3/4.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.2

3.3.2.1 **(Risk-Informed)** The Engineered Safety Feature Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE ~~with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4~~. LA.1

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

INSERT PROPOSED NOTE TO ACTIONS A.2

Action A

a. ~~With an ESFAS instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3-4~~, declare the channel inoperable and apply the applicable ACTION requirement of Table 3.3-3 until the channel is restored to OPERABLE status ~~with the trip setpoint adjusted consistent with the Trip Setpoint value~~. LA.1 A.2 LA.1

b. ~~With an ESFAS instrumentation channel inoperable, take the ACTION shown in Table 3.3-3.~~ A.2

SURVEILLANCE REQUIREMENTS

SRs 3.3.2.1 → 3.3.2.8 and 3.3.2.10

4.3.2.1.1 **Each ESFAS instrumentation channel, interlock, and the automatic actuation logic and relays shall be demonstrated OPERABLE by the performance of the Engineered Safety Features** Actuation System instrumentation surveillance requirements specified in Table 4.3-2. A.3

SR 3.3.2.9

on a STAGGERED TEST BASIS A.9

4.3.2.1.2 The ENGINEERED SAFETY FEATURE RESPONSE TIME of each ESFAS function shall be demonstrated to be within the limit at least once per 18 months~~. Each test shall include at least one logic train such that both logic trains are tested at least once per 36 months and one channel per function such that all channels are tested at least once per N times 18 months where N is the total number of redundant channels in a specific ESFAS function as shown in the "Total No. of Channels" Column of Table 3.3-3.~~ A.9 LA.9

ITS
3.3
3.3.5

INSTRUMENTATION (Loss of Power (LOP) Emergency Diesel Generator (EDG))

3/4.3.2 ~~ENGINEERED SAFETY FEATURE ACTUATION SYSTEM~~ INSTRUMENTATION A.2

LIMITING CONDITION FOR OPERATION

<See ITS 3.3.2>

LCO 3.3.5

3.3.2.1 **(Risk-Informed)** ~~The Engineered Safety Feature Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4.~~ INSERT proposed ITS LCO 3.3.5 A.2 LA.2

APPLICABILITY: As shown in Table 3.3-3. A.3

Note — ACTION: INSERT proposed Note to proposed Actions A.1

Action A

a. With an ESFAS instrumentation channel trip setpoint (inoperable) ~~less conservative than the value shown in the Allowable Values column of Table 3.3-4~~, declare the channel inoperable and apply the applicable ACTION requirement of Table 3.3-3 until the channel is restored to OPERABLE status ~~with the trip setpoint adjusted consistent with the Trip Setpoint value.~~ LA.1 LA.2

b. ~~With an ESFAS instrumentation channel inoperable, take the ACTION shown in Table 3.3-3.~~ A.2

SURVEILLANCE REQUIREMENTS

SRs 3.3.5.1 3.3.5.2

4.3.2.1.1 **Each ESFAS instrumentation channel, interlock, and the automatic actuation logic and relays shall be demonstrated OPERABLE by the performance of the Engineered Safety Features Actuation System instrumentation surveillance requirements specified in Table 4.3-2.**

3.3.5.3

4.3.2.1.2 **The ENGINEERED SAFETY FEATURE RESPONSE TIME of each ESFAS function shall be demonstrated to be within the limit at least once per 18 months.** ~~Each test shall include at least one logic train such that both logic trains are tested at least once per 36 months and one channel per function such that all channels are tested at least once per N times 18 months where N is the total number of redundant channels in a specific ESFAS function as shown in the "Total No. of Channels" Column of Table 3.3-3.~~ A.4 LA.4

A.1

TABLE 3.3-3

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

ITS	FUNCTIONAL UNIT	Required ~~TOTAL NO. OF~~ CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES or other specified condition	Condition ~~ACTION~~	A.5
1	1. SAFETY INJECTION						
1a	a. Manual Initiation	2	1	2	1, 2, 3, 4	~~18~~ B	A.1
1b	b. Automatic Actuation	2	1	2	1, 2, 3, 4	~~13~~ C	A.1
1c	c. Containment Pressure – High	3	2	2	1, 2, 3	~~13~~ D	M.4
1d	d. Pressurizer Pressure – Low-Low	3	2	2	Proposed Note a A.11 1, 2, 3#	~~14~~ D	M.4
1e	e. Differential Pressure Between Steam Lines – High	3/steam line	2/steam line twice and 1/3 steam lines	2/steam line	1, 2, 3	~~14~~ D A.7	M.4

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A.1

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

ITS	FUNCTIONAL UNIT	Required ~~TOTAL NO.~~ ~~OF~~ CHANNELS	~~CHANNELS TO TRIP~~	~~MINIMUM CHANNELS OPERABLE~~	APPLICABLE MODES or other specified conditions	Condition ~~ACTION~~	A.5
1f/g	f. Steam Flow in Two Steam Lines – High	2/steam line	~~1/steam line any 2 steam lines~~	~~1/steam line~~	1, 2, 3 (##) Proposed note b A.4	~~14~~ D	M.4
	COINCIDENT WITH EITHER						
1f	T_{avg} – Low-Low	1 T_{avg}/loop	~~1 T_{avg} any 2 loops~~	~~1 T_{avg} any 2 loops~~	1, 2, 3 (##) Proposed note b A.4	~~14~~ D	M.4
1g	OR, COINCIDENT WITH Steam Line Pressure – Low	1 pressure/ line	~~1 pressure any 2 lines~~	~~1 pressure any 2 lines~~	1, 2, 3 (##) Proposed note b A.4	~~14~~ D A.7	M.4

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A.1

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

ITS	FUNCTIONAL UNIT	Required ~~TOTAL NO.~~ OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	Other specified condition APPLICABLE MODES	Condition ~~ACTION~~	A.5
2	2. CONTAINMENT SPRAY						
2a	a. Manual	2 sets /Train (A.11) 2 switches/set Trains	1 set	2 sets	1, 2, 3, 4	18 B	A.1
2b	b. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13 C	A.1
2c	c. Containment Pressure – High-High	4	2	3	1, 2, 3	14 A.7 E	M.5
3	3. CONTAINMENT ISOLATION						
3a	a. Phase "A" Isolation						
3a1	1) Manual	2	1	2	1, 2, 3, 4	18 B	A.1
3a2	2) From Safety Injection Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13 C	A.1
3a3	See function 1 for all initiation function and requirements (A.6)						
3b	b. Phase "B" Isolation						
3b1	1) Manual (See function 2.a for all functions and requirements) (A.14)	2 sets 2 switches/set	1 set	2	1, 2, 3, 4	18	A.14
3b2	2) Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13 C	A.1
3b3	3) Containment Pressure – High-High (See function 2.c for all functions and requirements)	~~4~~ A.15	2	3	1, 2, 3	16	A.15

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A.1

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

ITS	FUNCTIONAL UNIT	Required ~~TOTAL NO. OF CHANNELS~~	~~CHANNELS TO TRIP~~	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES / or other specified condition	Condition ~~ACTION~~	A.5
4	4. STEAM LINE ISOLATION				L.2		
4a	a. Manual	2/steam line	~~1/steam line~~	2/steam line	1, 2, 3 proposed note d	~~21~~ F	A.1
4b	b. Automatic Actuation Logic	2	~~1~~	2	L.2 1, 2, 3 proposed note d	~~20~~ G	A.1
4c	c. Containment Pressure – Intermediate High-High	3	~~2~~	2	L.2 1, 2, 3 proposed note d	~~14~~ D	M.4
4d/e	d. Steam Flow in Two Steam Lines – High	2/steam line	~~1/steam line any 2 steam lines~~	1/steam line	1, 2, 3 proposed note d A.4	~~14~~ D	M.4
	COINCIDENT WITH EITHER					A.7	
4d	T_{avg} – Low-Low	1 T_{avg}/loop	~~1 T_{avg} any 2 loops~~	1 T_{avg} any 2 loops	1, 2, 3 proposed note d A.4	~~14~~ D	M.4
	OR, COINCIDENT WITH						
4e	Steam Line Pressure – Low	1 pressure/line	~~1 pressure any 2 lines~~	1 pressure any 2 lines	1, 2, 3 proposed note d A.4	~~14~~ D	M.4

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TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

ITS	FUNCTIONAL UNIT	Required ~~TOTAL NO.~~ OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES or other specified conditions	Condition ~~ACTION~~	A.5
5	5. TURBINE TRIP & FEEDWATER ISOLATION						
5b	a. Steam Generator Water Level – High-High	3/loop	~~2/loop~~	~~2/loop~~	1, 2, 3 Proposed Note e A.1	~~14~~ D A.7	M.4
5a	b. Automatic Actuation Logic and Actuation Relays	2	~~1~~	~~2~~	1, 2, 3 Proposed note e A.1	~~20~~ G	A.1
5c	c. Safety Injection (SI)	See #1 above (All SI initiating functions and requirements)					
6	6. AUXILIARY FEEDWATER PUMP START						
	~~a. Manual Initiation~~	~~2~~	~~1~~	~~2~~	~~1, 2, 3~~	~~21~~	L.1
6a	b. Automatic Actuation Logic	2	~~1~~	~~2~~	1, 2, 3	~~20~~ G	A.1
6b	c. Steam Generator Water Level Low-Low	3/stm. gen.	~~2/stm. gen~~	~~2/stm. gen.~~ A.5	1, 2, 3	~~14~~ D A.7	M.4
6c	d. Safety Injection (SI)	See #1 above (All SI initiating functions and requirements)					
6d	e. Station Blackout	1/bus on 2 busses	~~1/bus on 2 busses~~	~~1/bus on 2 busses~~	1, 2, 3	~~21~~ F	A.1
6e	f. Main Feed Pump Trip	2/pump	~~1/pump~~	~~1/pump~~ A.5	1, 2	~~22~~ H A.7	A.1

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TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

ITS	FUNCTIONAL UNIT	Required TOTAL NO. ~~OF~~ CHANNELS	~~CHANNELS TO TRIP~~	MINIMUM CHANNELS ~~OPERABLE~~	APPLICABLE MODES or other specified condition	Condition ACTION	A.5
	7. LOSS OF POWER						
	a. 4.16 Kv Emergency Bus Undervoltage (Loss of Voltage)	3/Bus	2/Bus	2/Bus	1, 2, 3, 4	19*	See ITS 3.3.5
	b. 4.16 Kv Emergency Bus Undervoltage (Grid Degraded Voltage)	3/Bus	2/Bus	2/Bus	1, 2, 3, 4	19*	See ITS 3.3.5
8	8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS						
8b	a. Pressurizer Pressure, P-11	3	2	2	1, 2, 3	~~20~~ J (A.7)	A.10
8c	b. Low-Low T_{avg}, P-12	3	2	2	1, 2, 3	~~20~~ J	A.10
8a	c. Reactor Trip, P-4	2	1	2	1, 2, 3	~~21~~ F	A.1

A.5

7 Insert proposed Automatic Swapover to Containment Sump Function M.3

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TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

L.1

ITS	FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	~~CHANNELS TO TRIP~~	~~MINIMUM CHANNELS OPERABLE~~	APPLICABLE MODES	ACTION
	7. LOSS OF POWER					
LCO 3.3.5	a. 4.16 Kv Emergency Bus Undervoltage (Loss of Voltage)	3/Bus	~~2/Bus~~	~~2/Bus~~	1, 2, 3, 4	~~19*~~ INSERT PROPOSED ACTION A (A.1)
LCO 3.3.5	b. 4.16 Kv Emergency Bus Undervoltage (Grid Degraded Voltage)	3/Bus	~~2/Bus~~	~~2/Bus~~	1, 2, 3, 4	~~19*~~
	8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS					
	a. Pressurizer Pressure, P-11	3	2	2	1, 2, 3	22*
	b. Low-Low T_{avg}, P-12	3	2	2	1, 2, 3	22*
	c. Reactor Trip, P-4	2	1	2	1, 2, 3	21

see ITS 3.3.2

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ITS 3.3.5

TABLE 3.3-3 (Continued)

TABLE NOTATION

ITS

Note a — # ~~Trip function may be blocked in this MODE below~~ Above the P-11 setpoint. A.11

Note b — ## ~~Trip function may be blocked in this MODE below~~ Above the P-12 setpoint. A.4

Note e — ### Except when all MFIVs, MFRVs, and associated bypass valves are closed and de-activated or isolated by a closed manual valve. A.1

~~* The provisions of Specification 3.0.4 are not applicable.~~ A.7

ACTION STATEMENTS

Action C — ACTION 13 – Note — With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 24 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.1.

Action D — ACTION 14 – Note — With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and POWER OPERATION may proceed provided the following conditions are satisfied:

a. The inoperable channel is placed in the tripped condition within 72 hours.

b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels per Specification 4.3.2.1.

ACTION 15 – Deleted — INSERT PROPOSED Required Action D.2 — M.4

Action E — ACTION 16 – Note — With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and POWER OPERATION may proceed provided the inoperable channel is placed in the blocked condition within 72 hours; one additional channel may be blocked for up to 12 hours for surveillance testing per Specification 4.3.2.1.1.

INSERT PROPOSED REQUIRED Action E.2 — M.5

Note d — INSERT proposed Note d — L.2

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TABLE 3.3-3 (Continued)

ITS

Action H — ACTION 17 – With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours.

Action B — ACTION 18 – With the number of OPERABLE Channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

ACTION 19 – With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and POWER OPERATION may proceed provided the following conditions are satisfied:

a. The inoperable channel is placed in the tripped condition within 72 hours. <See ITS 3.3.5>

b. The Minimum Channels OPERABLE requirement is met: however, one additional channel may be bypassed for up to 12 hours for surveillance testing per Specification 4.3.2.1.1.

Action G — ACTION 20 – Note ~~With the~~ number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and at least HOT SHUTDOWN within the following 6 hours: however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.1 provided the other Channel is OPERABLE.

Action F — ACTION 21 – With the number of OPERABLE Channels one less than the Total Number of Channels, restore the inoperable Channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in at least HOT SHUTDOWN within the following 6 hours.

Action J — ACTION 22 – With less than the Minimum Channels OPERABLE, within 1 hour determine ~~by observation of the associated permissive annunciator window(s)~~ that the interlock(s) is in its required state for the existing plant condition ~~or apply Specification 3.0.3.~~ LA.10 A.10

Insert proposed Required Action J.2

Action I — Insert Proposed Action I M.3

ITS

Action A

Action A Note

Action B

Action C

(A.1)

TABLE 3.3-3 (Continued)

ACTION 17 – With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours.

ACTION 18 – With the number of OPERABLE Channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

<See ITS 3.3.2>

ACTION 19 – With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and POWER OPERATION may proceed provided the following conditions are satisfied:

a. The inoperable channel is placed in the tripped condition within 72 hours.

b. The Minimum Channels OPERABLE requirement is met; however, one additional channel may be bypassed for up to 12 hours for surveillance testing per Specification 4.3.2.1.1.

ACTION 20 – With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and at least HOT SHUTDOWN within the following 6 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing per Specification 4.3.2.1.1 provided the other Channel is OPERABLE.

ACTION 21 – With the number of OPERABLE Channels one less than the Total Number of Channels, restore the inoperable Channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in at least HOT SHUTDOWN within the following 6 hours.

<See ITS 3.3.2>

ACTION 22 – With less than the Minimum Channels OPERABLE, within 1 hour determine by observation of the associated permissive annunciator window(s) that the interlock(s) is in its required state for the existing plant condition or apply Specification 3.0.3.

INSERT PROPOSED Action B (L.1)

INSERT PROPOSED Action C (L.2)

A.7

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE INTERLOCKS

ITS	DESIGNATION	CONDITION	SETPOINT	ALLOWABLE VALUES	FUNCTION
8b	P-11	With 2 of 3 pressurizer pressure channels above setpoint	2000 psig	≤ 2010 psig	P-11 prevents manual block of safety injection actuation on low-low pressurizer pressure.
		With 2 of 3 pressurizer pressure channels below setpoint	1980 psig	≤ 1990 psig	P-11 allows manual block of safety injection actuation on low-low pressurizer pressure.
8c	P-12	With 2 of 3 T_{avg} channels above setpoint	543°F (Nominal)	≤ 545°F	P-12 prevents manual block of safety injection actuation on high steam line flow.
		With 2 of 3 T_{avg} channels below setpoint	543°F (Nominal)	≥ 54[illegible]°F 2 M.7	P-12 allows manual block of safety injection actuation on high steam line flow.

LA.4 LA.8 LA.4

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A.1

TABLE 3.3-4

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

ITS	FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES	
1	1. SAFETY INJECTION, ~~TURBINE TRIP AND FEEDWATER ISOLATION~~ A.1			
1a	a. Manual Initiation	~~Not Applicable~~	Not Applicable	
1b	b. Automatic Actuation Logic	~~Not Applicable~~	Not Applicable	
1c	c. Containment Pressure--High	~~≤ 17 psia~~	≤ ~~18.5~~ psia 17.7	13 M.7
1d	d. Pressurizer Pressure -- Low-Low	~~≥ 1765 psig~~	≥ ~~1755~~ psig 1770	M.7
1e	e. Differential Pressure Between Steam Lines--High	~~≤ 100 psi~~	≤ 112 psid	A.1
1f	f. Steam Flow in Two Steam Lines-- High Coincident with T_{avg}--Low-Low or Steam Line Pressure--Low	~~≤ A function defined as follows: a Δp corresponding to 40% of full steam flow between 0% and 20% load and then a Δp increasing linearly to a Δp corresponding to 110% of full steam flow at full load~~	≤ A function defined as follows: a Δp corresponding to ~~44%~~ of full steam flow between 0% and 20% load and then a Δp increasing linearly to a Δp corresponding to ~~111.5%~~ of full steam flow at full load	43 M.7 <see Note c> 111 M.7
		~~T_{avg} ≥ 543°F ≥ 600 psig steam line pressure~~	T_{avg} ≥ 542°F ≥ 585 psig steam line pressure	13

LA.8

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TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

ITS	FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES	
2	2. CONTAINMENT SPRAY			
2a	a. Manual Initiation	Not Applicable	Not Applicable	
2b	b. Automatic Actuation Logic	Not Applicable	Not Applicable	
2c	c. Containment Pressure--High-High	≤ 27.75 psia	≤ ~~29.25~~ psia 28.45	13 M.7
3	3. CONTAINMENT ISOLATION			
3a	a. Phase "A" Isolation			
3a1	1. Manual	Not Applicable	Not Applicable	
3a2	2. From Safety Injection	Not Applicable	Not Applicable	A.6
3a3	Automatic Actuation logic			
3b	b. Phase "B" Isolation			
3b1	1. Manual	Not Applicable	Not Applicable	
3b2	2. Automatic Actuation Logic	Not Applicable	Not Applicable	
3b3	3. Containment Pressure--High-High	≤ 27.75 psia	≤ 29.25 psia Refer to Function 2.c for all Functions and Requirements	13 A.15

LA.8

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TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

ITS	FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES	
4	4. STEAM LINE ISOLATION			
4.a	a. Manual	Not Applicable	Not Applicable	
4.b	b. Automatic Actuation Logic	Not Applicable	Not Applicable	
4.c	c. Containment Pressure--Intermediate High-High	~~≤ 17.8 psia~~	≤ 19.3 psia 18.5	13 M.7
4d	d. Steam Flow in Two Steam lines--High Coincident with T_{avg} --Low-Low Or Steam Line Pressure--Low	~~≤ A function defined as follows: a Δp corresponding to 40% of full steam flow between 0% and 20% load and then a Δp increasing linearly to a Δp corresponding to 110% of full steam flow at full load.~~	≤ A function defined as follows: a Δp corresponding to 44% 43 of full steam flow between 0% and 20% load and then a Δp increasing linearly to a Δp corresponding to 111.5% 111 of full steam flow at full load.	M.7 See Note C M.7
		~~T_{avg} ≥ 543°F~~	T_{avg} ≥ 542°F	13
		~~≥ 600 psig steam line pressure~~	≥ 585 psig steam line pressure	
5	5. TURBINE TRIP AND FEEDWATER ISOLATION			
5b	a. Steam Generator Water level--High-High	~~≤ 75% of narrow range instrument span each steam generator~~ LA.8	~~≤ 76% of narrow range instrument span each steam generator~~	LA.7

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A.1

TABLE 3.3-4 (continued)
ENGINEERED SAFETY FEATURE ACTUATION SYSTEM
INSTRUMENTATION TRIP SETPOINTS

ITS	FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES	
6	6. AUXILIARY FEEDWATER PUMP START			
	a. Manual	N. A.	N.A.	L.1
6a	b. Automatic Actuation Logic	N. A.	N. A.	
6b	c. Steam Generator Water Level Low-Low	≥18% of narrow range instrument span each steam generator	≥17% of narrow range instrument span each steam generator	LA.3
6c	d. S. I.	See 1 above (all S.I. Setpoints)		
6d	e. Station Blackout	≥2392 volts on Transfer Bus	≥2184 volts on Transfer Bus	LA.5
6e	f. Trip of Main Feed Pump	N. A.	N. A.	
		LA.8		
	7. LOSS OF POWER			
	a. 4160 Volt Emergency Bus Undervoltage (Loss of Voltage)	3080 ±13 volts with a time delay of 2.0 ±0.5 seconds	≥2989 volts with a time delay of ≤3.0 seconds	See ITS 3.3.5
	b. 4160 Volt Emergency Bus Undervoltage (Degraded Voltage)	3746 ±7 volts with a time delay of 56 ±6 seconds	≥3688 volts with a time delay of ≤63 seconds	
7	INSERT proposed Function 7		≥18.4% and ≤20.4%	M.3

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TABLE 3.3-4 (continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM

INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES	
6. AUXILIARY FEEDWATER PUMP START			
a. Manual	N. A.	N. A.	
b. Automatic Actuation Logic	N. A.	N. A.	
c. Steam Generator Water Level Low-Low	≥18% of narrow range instrument span each steam generator	≥17% of narrow range instrument span each steam generator	< See ITS 3.3.2 >
d. S. I.	See 1 above (all S.I. Setpoints)		
e. Station Blackout	≥2392 volts on Transfer Bus	≥2184 volts on Transfer Bus	
f. Trip of Main Feed Pump	N. A.	N. A.	
SR 3.3.5.2 7. LOSS OF POWER	LA.2	and ≤ 3225v	M.2
a. 4160 Volt Emergency Bus Undervoltage (Loss of Voltage)	~~3080 ±13 volts with a time delay of 2.0 ±0.5 seconds~~	2935 ≥~~2989~~ volts with a time delay of ≤3.0 seconds	L.3 M.2
b. 4160 Volt Emergency Bus Undervoltage (Degraded Voltage)	~~3746 ±7 volts with a time delay of 56 ±6 seconds~~	3720 and ≤3772 ≥~~3688~~ volts with a time delay of ≤63 seconds	M.1
		≥3720 volts with a time delay of ≤9.0 seconds with an SI signal	M.1

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ITS 3.3.5

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PAGES 3/4 3-27 THRU 3/4 3-30 ARE DELETED

(The next Page is 3/4 3-31)

A.1

TABLE 4.3-2

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

ITS	FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST (COT TADOT ALT MRT) A.3	SLAVE RELAY TEST	MODES IN WHICH SURVEILLANCE REQUIRED	Response time Test A.1 A.8
1	1. SAFETY INJECTION						
1a	a. Manual Initiation	N.A.	N.A.	3.3.2.7 R(1) A.12	N.A.	1, 2, 3, 4	N/A A.16
1b	b. Automatic Actuation Logic	N.A.	N.A.	3.3.2.2 3.3.2.3 M(2) LA.2	3.3.2.5 Q(4) A.1	1, 2, 3, 4	N/A A.16
1c	c. Containment Pressure – High	3.3.2.1 S A.1	3.3.2.8 R A.1	3.3.2.4 Q(3) LA.6	N.A.	1, 2, 3	3.3.2.9
1d	d. Pressurizer Pressure – Low-Low	3.3.2.1 S A.1	3.3.2.8 R A.1	3.3.2.4 Q A.3	N.A.	1, 2, 3	3.3.2.9
1e	e. Differential Pressure Between Steam Lines – High	3.3.2.1 S A.1	3.3.2.8 R A.1	3.3.2.4 Q A.3	N.A.	1, 2, 3	3.3.2.9
1f/g 1f 1g	f. Steam Flow in Two Steam Lines – High Coincident with T_{avg} – Low-Low or Steam Line Pressure – Low	3.3.2.1 S A.1	3.3.2.8 R A.1	3.3.2.4 Q A.3	N.A.	1, 2, 3	3.3.2.9
2	2. CONTAINMENT SPRAY						
2a	a. Manual Initiation	N.A.	N.A.	3.3.2.7 R(1) A.12	N.A.	1, 2, 3, 4	N/A A.16
2b	b. Automatic Actuation Logic	N.A.	N.A.	3.3.2.2 3.3.2.3 M(2) LA.2	3.3.2.5 Q(4) A.1	1, 2, 3, 4	N/A A.16
2c	c. Containment Pressure – High-High	3.3.2.1 S A.1	3.3.2.8 R A.1	3.3.2.4 Q(3) LA.6	N.A.	1, 2, 3	3.3.2.9

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3.3 SEE ITS

A.1

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

ITS	FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	~~CHANNEL FUNCTIONAL TEST~~ COT TADOT MLT ALT A.3	SLAVE RELAY TEST	~~MODES IN WHICH SURVEILLANCE REQUIRED~~ A.8	Response Time Test A.1
3	3. CONTAINMENT ISOLATION						
3a	a. Phase "A" Isolation						
3a1	1) Manual	N.A.	N.A.	3.3.2.7 R(1) A.12	N.A.	1, 2, 3, 4	NA A.16
3a2	2) From Safety Injection Automatic Actuation Logic	N.A.	N.A.	3.3.2.2 3.3.2.3 M(2) LA.2	3.3.2.5 Q(4) A.1	1, 2, 3, 4	NA A.16
3a3	Refer to Function 1 for functions and requirements A.6						
3b	b. Phase "B" Isolation A.14						
3b1	1) Manual Refer to Function 2A for function and requirements	~~N.A.~~	~~N.A.~~	~~R(1)~~	~~N.A.~~	1, 2, 3, 4	
3b2	2) Automatic Actuation Logic	N.A.	N.A.	3.3.2.2 3.3.2.3 M(2) LA.2	3.3.2.5 Q(4) A.1	1, 2, 3, 4	NA A.16
3.	3) Containment Pressure – High-High A.15 Refer to Function 2c for functions and requirements	~~S~~	~~R~~	~~Q(3)~~	~~N.A.~~	1, 2, 3	
4	4. STEAM LINE ISOLATION						
4a	a. Manual	N.A.	N.A.	3.3.2.7 R(1) A.12	N.A.	1, 2, 3	NA A.16
4b	b. Automatic Actuation Logic	N.A.	N.A.	3.3.2.2 3.3.2.3 M(2) LA.2	3.3.2.5 Q(4) A.1	1, 2, 3	NA A.16
4c	c. Containment Pressure – Intermediate High-High	3.3.2.1 S A.1	3.3.2.9 R A.1	3.3.2.4 Q(3) LA.6	N.A.	1, 2, 3	3.3.2.9
4d 4e	d. Steam Flow in Two Steam Lines – High Coincident with T_{avg} – Low-Low or Steam Line Pressure – Low	3.3.2.1 S A.1	3.3.2.8 R A.1	3.3.2.3 Q A.3	N.A.	1, 2, 3	3.3.2.9

A.1

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

ITS	FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST (A.3) COT TADOT MRT ALT	SLAVE RELAY TEST	MODES IN WHICH SURVEILLANCE REQUIRED (A.8)	Response Time Test (A.1)
5	5. TURBINE TRIP AND FEEDWATER ISOLATION						
5b	a. Steam Generator Water Level – High-High	3.3.2.1 ~~S~~ A.1	3.3.2.8 ~~R~~ A.1	3.3.2.4 ~~Q~~ A.3	N.A.	1, 2, 3[#]	3.3.2.9
5a	b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	3.3.2.2 3.3.2.3 ~~M~~[(1)] LA.2	3.3.2.5 ~~R~~[(1)] A.1	1, 2, 3[#]	NA A.16
5c	c. Safety Injection (SI)	See 1 above (all SI Surveillance Requirements)					
6	6. AUXILIARY FEEDWATER PUMPS						
	a. ~~Manual~~	~~N.A.~~	~~N.A.~~	~~R[(1)]~~	~~N.A.~~ L.1	1, 2, 3	
6a	b. Automatic Actuation Logic	N.A.	N.A.	3.3.2.2 3.3.2.3 ~~M~~ LA.2	3.3.2.5 ~~R~~[(1)] A.1	1, 2, 3	NA A.16
6b	c. Steam Generator Water Level – Low-Low	3.3.2.1 ~~S~~ A.1	3.3.2.8 ~~R~~ A.1	3.3.2.4 ~~Q~~ A.3	N.A.	1, 2, 3	3.3.2.9
6c	d. Safety Injection (SI)	See 1 above (all SI Surveillance Requirements)					
6d	e. Station Blackout	N.A.	3.3.2.8 ~~R~~ A.1	3.3.2.6 ~~N.A.~~ M.6	N.A.	1, 2, 3	3.3.2.9
6e	f. Main Feedwater Pump Trip	N.A.	3.3.2.8 ~~N.A.~~ M.2	3.3.2.7 ~~R~~ A.1	N.A.	1, 2	3.3.2.9

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ITS 3.3.2

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TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

ITS	FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	~~CHANNEL FUNCTIONAL TEST~~ TADOT A.3	SLAVE RELAY TEST	~~MODES IN WHICH SURVEILLANCE REQUIRED~~ A.8
	7. LOSS OF POWER 4.16 KV Emergency Bus					
	a. Loss of Voltage	N.A.	R	Q(5)	N.A.	1, 2, 3, 4
	b. Degraded Voltage	N.A.	R	Q(5)	N.A.	1, 2, 3, 4
8	8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS					
8b	a. Pressurizer Pressure, P-11	3.3.2.1 N.A M.1	3.3.2.8 R A.1	R A.13	N.A.	1, 2, 3
8c	b. Low - Low T_{avg}, P-12	3.3.2.1 N.A M.1	3.3.2.8 R A.1	R A.13	N.A.	~~1, 2, 3~~
8a	c. Reactor Trip, P-4	N.A.	N.A.	3.3.2.10 R A.3	N.A.	1, 2, 3

< see ITS 3.3.5 >

A.8

7 Insert Proposed SRs for Function 7

M.3

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NORTH ANNA - UNIT 1

ITS

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	SLAVE RELAY TEST	MODES IN WHICH SURVEILLANCE REQUIRED
7. LOSS OF POWER 4.16 KV Emergency Bus		A.1			
SRs 3.3.5.1 3.3.5.2 a. Loss of Voltage	N.A.	3.3.5.2 R	3.3.5.1 Q(5)	N.A.	1, 2, 3, 4
			LA.3		
b. Degraded Voltage	N.A.	3.3.5.2 R	3.3.5.1 Q(5)	N.A.	1, 2, 3, 4
8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS					
a. Pressurizer Pressure, P-11	N.A	R	R	N.A.	1, 2, 3
b. Low - Low T_{avg}, P-12	N.A.	R	R	N.A.	1, 2, 3
c. Reactor Trip, P-4	N.A.	N.A.	R	N.A.	1, 2, 3

<see ITS 3.3.2>

A.1

ITS 3.3.2

ITS

Note e

TABLE 4.3-2 (Continued)

TABLE NOTATION

Except when all MFIVs, MFRVs and associated bypass valves are closed and deactivated or isolated by a closed manual valve. A.8

(1) ~~Manual actuation switches shall be tested at least once per 18 months during shutdown.~~ A.12

(2) ~~Each train or logic channel shall be functionally tested at least every other 31 days up to and including input coil continuity testing to the ESF slave relays.~~ LA.2

(3) ~~The CHANNEL FUNCTIONAL TEST shall include exercising the transmitter by applying either a vacuum or pressure to the appropriate side of the transmitter.~~ LA.6

(4) Only slave relays that do not satisfy any of the following criteria will be functionally tested: <Note in SR 3.3.2.5>

1. A single failure in the Safeguards Test Cabinet circuitry would cause an inadvertent RPS or ESF actuation.
2. The test will adversely affect two or more components in one ESF system or two or more ESF systems.
3. The test will create a transient (reactivity, thermal, or hydraulic) condition on the RCS.

(5) Each train or logic channel shall be functionally tested up to and including input coil continuity testing to the ESF slave relays. <See ITS 3.3.5>

A.1

ITS 3.3.5

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TABLE 4.3-2 (Continued)

TABLE NOTATION

#	Except when all MFIVs, MFRVs and associated bypass valves are closed and deactivated or isolated by a closed manual valve.
(1)	Manual actuation switches shall be tested at least once per 18 months during shutdown.
(2)	Each train or logic channel shall be functionally tested at least every other 31 days up to and including input coil continuity testing to the ESF slave relays.
(3)	The CHANNEL FUNCTIONAL TEST shall include exercising the transmitter by applying either a vacuum or pressure to the appropriate side of the transmitter.
(4)	Only slave relays that <u>do not</u> satisfy any of the following criteria will be functionally tested:

1. A single failure in the Safeguards Test Cabinet circuitry would cause an inadvertent RPS or ESF actuation.
2. The test will adversely affect two or more components in one ESF system or two or more ESF systems.
3. The test will create a transient (reactivity, thermal, or hydraulic) condition on the RCS.

<SEE ITS 3.3.2>

(5) ~~Each train or logic channel shall be functionally tested up to and including input coil continuity testing to the ESF slave relays.~~ LA.3

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INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

RADIATION MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.1 The radiation monitoring instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits.

APPLICABILITY: As shown in Table 3.3-6.

ACTION:

a. With a radiation monitoring channel alarm/trip setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.

b. With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-6.

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

R.1

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the modes and at the frequencies shown in Table 4.3-3.

ITS

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Fuel Storage Pool Area					
i. Criticality Monitor #	1	*	≤ 15 mR/hr	10^{-4} - 10^{+1} R/hr	19
b. Containment					
i. Purge & Exhaust Isolation	1	6	≤ 50 mR/hr	10^{-4} - 10^{+1} R/hr	22
Function II — ii. High Range Area	2	1,2,3,&4	≤ $1.6\times10^{+5}$ R/hr	10^{0} - 10^{+7} R/hr	35
2. PROCESS MONITORS					
a. Ventilation Vent #					
i. Gaseous Gross Activity	1	**	≤ 1×10^{-5} µCi/ml	10 - 10^{6} cpm	21
ii. Particulate Gross Activity	1	**	≤ 2×10^{-9} µCi/ml	10 - 10^{6} cpm	21
b. Containment					
i. Gaseous Activity					
a) Purge & Exhaust Isolation	1	6	< 3.6×10^{3} cpm	10 - 10^{6} cpm	22
b) RCS Leakage Detection	1	1, 2, 3 & 4	N/A	10 - 10^{6} cpm	20
ii. Particulate Activity					
a) Purge & Exhaust Isolation	1	6	≤ 1×10^{5} cpm	10 - 10^{6} cpm	22
b) RCS Leakage Detection	1	1, 2, 3 & 4	N/A	10 - 10^{6} cpm	20

* With fuel in the storage pool or building
** With irradiated fuel in the storage pool
# Common to Unit 1 and Unit 2

See CTS 3.3.3.1

L-6

See CTS 3.3.3.1

see ITS 3.4.15

See CTS 3.3.3.1

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CTS 3.3.3.1

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Fuel Storage Pool Area					
i. Criticality Monitor #	1	*	≤ 15 mR/hr	$10^{-4} - 10^{+1}$ R/hr	19
b. Containment					
i. Purge & Exhaust Isolation	1	6	≤ 50 mR/hr	$10^{-4} - 10^{+1}$ R/hr	22
ii. High Range Area	2	1,2,3,&4	≤ $1.6\times10^{+5}$ R/hr	$10^{0} - 10^{+7}$ R/hr	35
2. PROCESS MONITORS					
a. Ventilation Vent #					
i. Gaseous Gross Activity	1	**	≤ 1×10^{-5} µCi/ml	$10 - 10^{6}$ cpm	21
ii. Particulate Gross Activity	1	**	≤ 2×10^{-9} µCi/ml	$10 - 10^{6}$ cpm	21
b. Containment					
i. Gaseous Activity					
a) Purge & Exhaust Isolation	1	6	< 3.6×10^{3} cpm	$10 - 10^{6}$ cpm	22
b) RCS Leakage Detection	1	1, 2, 3 & 4	N/A	$10 - 10^{6}$ cpm	20
ii. Particulate Activity					
a) Purge & Exhaust Isolation	1	6	< 1×10^{5} cpm	$10 - 10^{6}$ cpm	22
b) RCS Leakage Detection	1	1, 2, 3 & 4	N/A	$10 - 10^{6}$ cpm	20

R.1

See ITS 3.3.3

R.1

See ITS 3.4.15

R.1

See ITS 3.4.15

R.1

* With fuel in the storage pool or building
** With irradiated fuel in the storage pool
\# Common to Unit 1 and Unit 2

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TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Fuel Storage Pool Area					
i. Criticality Monitor #	1	*	$\leq$ 15 mR/hr	10^{-4} - 10^{+1} R/hr	19
b. Containment					
i. Purge & Exhaust Isolation	1	6	$\leq$ 50 mR/hr	10^{-4} - 10^{+1} R/hr	22
ii. High Range Area	2	1,2,3,&4	$\leq$ $1.6 \times 10^{+5}$ R/hr	10^{0} - 10^{+7} R/hr	35
2. PROCESS MONITORS					
a. Ventilation Vent #					
i. Gaseous Gross Activity	1	**	$\leq 1 \times 10^{-5}$ µCi/ml	10 - 10^{6} cpm	21
ii. Particulate Gross Activity	1	**	$\leq 2 \times 10^{-9}$ µCi/ml	10 - 10^{6} cpm	21
b. Containment					
i. Gaseous Activity					
a) Purge & Exhaust Isolation	1	6	$\leq 3.6 \times 10^{3}$ cpm	10 - 10^{6} cpm	22
b) RCS Leakage Detection	1	1, 2, 3 & 4	N/A	10 - 10^{6} cpm	20
ii. Particulate Activity					
a) Purge & Exhaust Isolation	1	6	$\leq 1 \times 10^{5}$ cpm	10 - 10^{6} cpm	22
b) RCS Leakage Detection	1	1, 2, 3 & 4	N/A	10 - 10^{6} cpm	20

* With fuel in the storage pool or building
** With irradiated fuel in the storage pool
\# Common to Unit 1 and Unit 2

See CTS 3.3.3.1

See CTS 3.3.3.1

See ITS 3.3.3

See CTS 3.3.3.1

See CTS 3.3.3.1

See CTS 3.3.3.1

A.1

LA.1

LA.1

Actions A.1, A.2, B.1.2, B.2, C.1 & C.2

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CTS 3.3.1

TABLE 3.3-6 (continued)

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
2. PROCESS MONITORS (Cont'd)					
c. Noble Gas High Range Effluent Monitors					
i. Ventilation Vent #	1	1,2,3, & 4	Hi $\le 4.72 \times 10^6 \mu Ci/sec$ Hi Hi $\le 1.89 \times 10^7 \mu Ci/sec$	$5 \times 10^{-7} - 10^{+5} \mu Ci/cc$	35
ii. Process Vent #	1	1,2,3, & 4	Hi $\le 4.72 \times 10^6 \mu Ci/sec$ Hi Hi $\le 1.89 \times 10^7 \mu Ci/sec$	$5 \times 10^{-7} - 10^{+5} \mu Ci/cc$	35
iii. Main Steam ##	1/loop	1,2,3, & 4	Hi ≤ 1.0 mR/hr Hi Hi ≤ 4.0 mR/hr	$10^{-2} - 10^{+7}$ mR/hr	35
iv. Auxiliary Feedwater Pump Turbine Exhaust	1	1,2,3, & 4	Hi ≤ 0.7 mR/hr Hi Hi ≤ 2.8 mR/hr	$10^{-2} - 10^{+7}$ mR/hr	35

\# Common to Unit 1 and Unit 2.

\## Main steam release path includes safety valves, atmospheric steam dump valves and the decay heat release path.

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R.1

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TABLE 3.3-6 (Continued)

TABLE NOTATION

ACTION 19 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, perform area surveys of the monitored area with portable monitoring instrumentation at least once per 24 hours.

see CTS 3.3.3.1

ACTION 20 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.

See ITS 3.4.15

ACTION 21 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.12.

See CTS 3.3.3.1

ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9.

see CTS 3.3.3.1

ACTION 35 - ~~With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, initiate the preplanned alternate method of monitoring the appropriate parameter(s), within 72 hours, and:~~

1. ~~Either restore the inoperable channel(s) to OPERABLE status within 7 days of the event, or~~
2. ~~Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.~~

Proposed Conditions A and B

L.6

TABLE 3.3-6 (Continued)

TABLE NOTATION

~~ACTION 19 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, perform area surveys of the monitored area with portable monitoring instrumentation at least once per 24 hours.~~

R.1

ACTION 20 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.

See ITS 3.4.15

~~ACTION 21 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.12.~~

~~ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9.~~

R.1

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, initiate the preplanned alternate method of monitoring the appropriate parameter(s), within 72 hours, and:

1. Either restore the inoperable channel(s) to OPERABLE status within 7 days of the event, or

2. Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

See ITS 3.3.3

A.1

ITS

TABLE 3.3-6 (Continued)

TABLE NOTATION

See CTS 3.3.3.1

ACTION 19 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, perform area surveys of the monitored area with portable monitoring instrumentation at least once per 24 hours.

Actions A.1, A.2, B.1.2, B.2, C.1 + C.2

ACTION 20 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.

ACTION 21 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.12.

See CTS 3.3.3.1

ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9.

See ITS 3.3.3

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, initiate the preplanned alternate method of monitoring the appropriate parameter(s), within 72 hours, and:

1. Either restore the inoperable channel(s) to OPERABLE status within 7 days of the event, or
2. Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

ITS

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TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. AREA MONITORS				
a. Fuel Storage Pool Area				
i. Criticality Monitor #	S	R	M	*
b. Containment				
i. Purge & Exhaust Isolation	S	R	M	6
ii. High Range Area	S	R	M	1, 2, 3, & 4
2. PROCESS MONITORS				
a. Ventilation Vent #				
i. Gaseous Gross Activity	S	R	M	**
ii. Particulate Gross Activity	S	R	M	**
b. Containment				
i. Gaseous Activity				
a)Purge & Exhaust Isolation	S	R	M	6
b)RCS Leakage Detection	S	R	M	1, 2, 3, & 4
ii. Particulate Activity				
a)Purge & Exhaust Isolation	S	R	M	6
b)RCS Leakage Detection	S	R	M	1, 2, 3, & 4

*With fuel in the storage pool or building
**With irradiated fuel in the storage pool
#Common to Unit 1 and Unit 2

See CTS 3.3.3.1

See CTS 3.3.3.1

L.6

See ITS 3.4.15

See CTS 3.3.3.1

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TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. AREA MONITORS				
a. Fuel Storage Pool Area				
i. Criticality Monitor #	S	R	M	*
b. Containment				
i. Purge & Exhaust Isolation	S	R	M	6
ii. High Range Area	S	R	M	1, 2, 3, & 4
2. PROCESS MONITORS				
a. Ventilation Vent #				
i. Gaseous Gross Activity	S	R	M	**
ii. Particulate Gross Activity	S	R	M	**
b. Containment				
i. Gaseous Activity				
a) Purge & Exhaust Isolation	S	R	M	6
b) RCS Leakage Detection	S	R	M	1, 2, 3, & 4
ii. Particulate Activity				
a) Purge & Exhaust Isolation	S	R	M	6
b) RCS Leakage Detection	S	R	M	1, 2, 3, & 4

*With fuel in the storage pool or building
**With irradiated fuel in the storage pool
#Common to Unit 1 and Unit 2

R.1

R.1

See ITS 3.4.15

R.1

R.1

See ITS 3.4.15

6-28-85

CTS 3.3.3.1

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ITS

NORTH ANNA - UNIT 1

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. AREA MONITORS				
a. Fuel Storage Pool Area				
i. Criticality Monitor #	S	R	M	*
b. Containment				
i. Purge & Exhaust Isolation	S	R	M	6
ii. High Range Area	S	R	M	1, 2, 3, & 4
2. PROCESS MONITORS				
a. Ventilation Vent #				
i. Gaseous Gross Activity	S	R	M	**
ii. Particulate Gross Activity	S	R	M	**
b. Containment				
i. Gaseous Activity				
a)Purge & Exhaust Isolation	S	R	M	6
b)RCS Leakage Detection	S	R	M 92 days	1, 2, 3, & 4
ii. Particulate Activity				
a)Purge & Exhaust Isolation	S	R	M	6
b)RCS Leakage Detection	S	R	M 92 days	1, 2, 3, & 4

*With fuel in the storage pool or building

**With irradiated fuel in the storage pool

#Common to Unit 1 and Unit 2

See CTS 3.3.3.1

See CTS 3.3.3.1

See ITS 3.3.3

See CTS 3.3.3.1

See CTS 3.3.3.1

3.4.15.1
3.4.15.2
3.4.15.4

3.4.15.1
3.4.15.2
3.4.15.4

See CTS 3.3.3.1

A.1

L.4

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ITS 3.4.15

0-26-83

TABLE 4.3-3 (Continued)

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
2. PROCESS MONITORS (Cont'd)				
c) Noble Gas High Range Effluent Monitors				
i. Ventilation Vent #	S	R	M	1,2,3 & 4
ii. Process Vent #	S	R	M	1,2,3 & 4
iii. Main Steam ##	S	R	M	1,2,3 & 4
iv. Auxiliary Feedwater Pump Turbine Exhaust	S	R	M	1,2,3 & 4

\# Common to Unit 1 and Unit 2.

\## Main steam release path includes the safety valves, atmospheric steam dump valves, and the decay heat release path.

R.1

6-28-85

11-26-77

INSTRUMENTATION

MOVABLE INCORE DETECTORS

LIMITING CONDITION FOR OPERATION

3.3.3.2 The movable incore detection system shall be OPERABLE with:

a. At least 75% of the detector thimbles,

b. A minimum of 2 detector thimbles per core quadrant, and

c. Sufficient movable detectors, drives, and readout equipment to map these thimbles.

APPLICABILITY:

When the movable incore detection system is used for:

a. Recalibration of the excore neutron flux detection system,

b. Monitoring the QUADRANT POWER TILT RATIO, or

c. Measurement of $F^N_{\Delta H}$, $F_Q(Z)$ and F_{xy} (Z)

ACTION:

With the movable incore detection system inoperable, do not use the system for the above applicable monitoring or calibration functions. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

R.1

SURVEILLANCE REQUIREMENTS

4.3.3.2 The movable incore detection system shall be demonstrated OPERABLE by normalizing each detector output to be used during its use when required for:

a. Recalibration of the excore neutron flux detection system, or

b. Monitoring the QUADRANT POWER TILT RATIO, or

c. Measurement of $F^N_{\Delta H}$, $F_Q(Z)$ and F_{xy} (Z)

CTS 3.3.3.3

INSTRUMENTATION

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 seismic monitoring instruments inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 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.

R.1

SURVEILLANCE REQUIREMENTS

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

4.3.3.3.2 Each of the above seismic monitoring instruments actuated during a seismic event shall be restored to OPERABLE status within 24 hours and a CHANNEL CALIBRATION performed within 5 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 6.9.2 within 10 days describing the magnitude, frequency spectrum and resultant effect upon facility features important to safety.

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CTS 3.3.3.3

5-6-92

TABLE 3.3-7

SEISMIC MONITORING INSTRUMENTATION

INSTRUMENTS AND SENSOR LOCATIONS	MEASUREMENT RANGE	MINIMUM INSTRUMENTS OPERABLE
1. Triaxial Time-History Accelerographs		
a. Containment Mat*	0 - 1.0 g	1
b. Containment Operating Level*	0 - 1.0 g	1
2. Triaxial Peak Accelerographs		
a. RHR Heat Exchanger	0 - 5.0 g	1
b. Safety Injection pipe	0 - 5.0 g	1
c. Component Cooling Heat Exchanger	0 - 5.0 g	1
3. Triaxial Seismic Switches		
a. Containment Mat*	NA	NA
4. Triaxial Response-Spectrum Recorders		
a. Containment Mat*	2 - 25.4 Hz	1
b. Auxiliary Building Mat	2 - 25.4 Hz	1
c. RHR Pipe Support	2 - 25.4 Hz	1
d. CC Heat Exchanger Support	2 - 25.4 Hz	1

*With reactor control room indication

R1

CTS 3.3.3.3

5-27-86

TABLE 4.3-4

SEISMIC MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENTS AND SENSOR LOCATIONS	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
1. Triaxial Time-History Accelerographs			
a. Containment Mat	M*	R	SA*
b. Containment Operating Level	M*	R	SA*
2. Triaxial Peak Accelerographs			
a. RHR Heat Exchanger	NA	R	NA
b. Safety Injection Pipe	NA	R	NA
c. Component Cooling Heat Exchanger	NA	R	NA
3. Triaxial Seismic Switches			
a. Containment Mat	NA	R	SA
4. Triaxial Response-Spectrum Recorders			
a. Containment Mat	M**	R	NA
b. Auxiliary Building Mat	M***	R	NA
c. RHR Pipe Support	NA	R	NA
d. Component Cooling Heat Exchanger Support	M***	R	NA

R1

* Except seismic trigger
** Testing will include annunciator circuit only
*** Testing will only include a visual inspection to detect for signs of obvious physical damage

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CTS 3.3.3.4

INSTRUMENTATION

METEOROLOGICAL INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.4 The meteorological monitoring instrumentation channels shown in Table 3.3-8 shall be OPERABLE.*

APPLICABILITY: At all times.

ACTION:

a. With one or more required meteorological monitoring channels inoperable for more than 7 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status.

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

R,1

SURVEILLANCE REQUIREMENTS

4.3.3.4 Each of the above meteorological monitoring instrumentation channels shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-5.

*Common to Unit 1 and Unit 2

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CTS 3.3.3.4

11-26-77

TABLE 3.3-8

METEOROLOGICAL MONITORING INSTRUMENTATION

INSTRUMENT	LOCATION	MINIMUM OPERABLE
1. WIND SPEED		
	a. Nominal Elev. 33 ft. (10m)	1
	b. Nominal Elev. 150 ft (~49m)	1
2. WIND DIRECTION		
	a. Nominal Elev. 33 ft. (10m)	1
	b. Nominal Elev. 150 ft. (~49m)	1
3. AIR TEMPERATURE		
	a. Nominal Elev. 33 ft. (10m)	1
4. AIR TEMPERATURE DELTA T		
	a. Between a Nominal Elev. of 33 ft. (10m) and a Nominal Elev. of 150 ft. (~49m)	1

R.1

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TABLE 4.3-5

METEOROLOGICAL MONITORING INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
1. WIND SPEED		
a. Nominal Elev. 33 ft. (10m)	D	SA
b. Nominal Elev. 150 ft. (~49m)	D	SA
2. WIND DIRECTION		
a. Nominal Elev. 33 ft. (10m)	D	SA
b. Nominal Elev. 150 ft. (~49m)	D	SA
3. AIR TEMPERATURE		
a. Nominal Elev.33 ft. (10m)	D	SA
4. AIR TEMPERATURE - DELTA T		
a. Between a Nominal Elev. of 33 ft. (10m) and a Nominal Elev. of 150 ft (~49m)	D	SA

R1

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ITS 3.3.4

(A.1)

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ITS
3.3
3.3.4

INSTRUMENTATION

AUXILIARY SHUTDOWN PANEL MONTIORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

LCO 3.3.4 — 3.3.3.5 The auxiliary shutdown panel monitoring instrumentation channels shown in Table 3.3-9 shall be OPERABLE with readouts displayed external to the control room. (M.2) (LA.1)

APPLICABILITY: MODES 1, 2 and 3. (A.2)

Note 2 — ACTION: (INSERT PROPOSED Note 2)

Action A — a. With the number of OPERABLE auxiliary shutdown panel monitoring channels less than required by Table 3.3-9, either restore the inoperable channel to OPERABLE status within 30 days, or

Action B — ~~be in HOT SHUTDOWN within the next 12 hours.~~ (INSERT PROPOSED Required Action B.1) (M.1)

Note 1 — b. ~~The provisions of Specification 3.0.4 are not applicable.~~

SURVEILLANCE REQUIREMENTS

SR 3.3.4.1, 3.3.4.3 — 4.3.3.5 . Each auxiliary shutdown panel monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6.

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A.1

8-2-89

TABLE 3.3-9

AUXILIARY SHUTDOWN PANEL MONITORING INSTRUMENTATION*

ITS

LA.2

ITS	INSTRUMENT	MEASUREMENT RANGE	MINIMUM CHANNELS OPERABLE
3a	1. Reactor Coolant Temperature - Average	530 - 630°F	1
2a	2. Pressurizer Pressure	1700 - 2500 psig	1
4a	3. Pressurizer Level	0 - 100%	1
3f	4. Auxiliary Feed Pump Discharge Header Pressure	500 - 1500 psig	1
3g	5. Emergency Condensate Storage Tank Level	0 - 100%	1
4b	6. Charging Flow	0 - 180 gpm	1
3c	7. ~~Main Steam Line~~ SG Pressure	0 - 1400 psig	1
3d	8. Steam Generator Level	0 - 100%	1
	9. Relay Room Positive Ventilation	0 - 0.50 inches H_2O	1
1a	Boric Acid Pump Controls		1
2b	Pressurizer Heater Controls		1
3b	AFW Pump and Valve Controls		1
3e	SG PORV Controls		1 per SG
4b	Charging Pump Controls		1

LA 1

L.1

M.2

*Located at Elevation 254' in the Emergency Switchgear and Relay Room.

LA 1

Rev.0

A.1

TABLE 4.3-6

AUXILIARY SHUTDOWN PANEL MONITORING INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

LA.2

ITS	INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
3a	1. Reactor Coolant Temperature - Average	M	R
2a	2. Pressurizer Pressure	M	R
4a	3. Pressurizer Level	M	R
3f	4. Auxiliary Feed Pump Discharge Header Pressure	M	R
3g	5. Emergency Condensate Storage Tank Level	M	R
4b	6. Charging Flow	M	R
3c	7. Main Steam Line Pressure (SG)	M	R
3d	8. Steam Generator Level	M	R
	9. Relay Room Positive Ventilation	M	R
		SR 3.3.4.1	SR 3.3.4.3
1a	Boric Acid Pump Controls		SR 3.3.4.2
2b	Pressurizer Heater Controls		SR 3.3.4.2
3b	AFW Pump and Valve Controls		SR 3.3.4.2
3e	SG PORV Controls		SR 3.3.4.2
4b	Charging Pump Controls		SR 3.3.4.2

A.1

L.1

A.1

M.2

ITS

3.3 **INSTRUMENTATION**

3.3.3 **~~ACCIDENT~~ MONITORING INSTRUMENTATION** A.1

LIMITING CONDITION FOR OPERATION

LCO 3.3.3 3.3.3.6 The accident monitoring instrumentation channels shown in Table 3.3-10 shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION: Note 1

INSERT proposed Note 2 to Actions A.2

Action A ~~a.~~ With the number of OPERABLE accident monitoring channels less than the total number of channels shown in Table 3.3-10, either restore the inoperable channel(s) to OPERABLE status within ~~7~~ 30 days ~~or be in at least HOT SHUTDOWN within the next 12 hours.~~ L.1

Action B INSERT proposed Action B

Action C ~~b.~~ With the number of OPERABLE accident monitoring instrumentation channels less than the MINIMUM CHANNELS OPERABLE requirements of Table 3.3-10, either restore the inoperable channel(s) to OPERABLE status within ~~48 hours~~ 7 days or be in at least

Action D Mode 3 within 6 hours and HOT SHUTDOWN within the next 12 hours. L.2

Actions Note ~~c.~~ ~~The provisions of Specification 3.0.4 are not applicable.~~ M.1

SURVEILLANCE REQUIREMENTS

INSERT Note to SR 3.3.3.3 A.3

SR 3.3.3.1 and 3.3.3.3 4.3.3.6 Each accident monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-7.

A.1

TABLE 3.3-10

ACCIDENT MONITORING INSTRUMENTATION

ITS

ITS		INSTRUMENT	Required TOTAL NO. OF CHANNELS	MINIMUM CHANNELS OPERABLE
8	1.	Containment Pressure	2	1
9		Containment Pressure (WIDE RANGE)	2	
3	2.	Reactor Coolant Inlet Temperature-T_{hot} (wide range)	2	1
4	3.	Reactor Coolant Inlet Temperature-T_{cold} (wide range)	2	1
5	4.	Reactor Coolant Pressure-Wide Range	2 1	1
13	5.	Pressurizer Water Level	2 1	1
17	6.	Steam Generator Line Pressure	2/steam generator	1/steam generator
15	7.	Steam Generator Water Level-Narrow Range	2/steam generator	1/steam generator
	8.	Refueling Water Storage Tank Water Level	1	1
	9.	Boric Acid Tank Solution Level	1	1
	10.	Auxiliary Feedwater Flow Rate	1/steam generator	1/steam generator
6b	11.	Reactor Coolant System Subcooling Margin Monitor	2	1
	12.	PORV Position Indicator	2/valve	1/valve
	13.	PORV Block Valve Position Indicator	1/valve	1/valve
	14.	Safety Valve Position Indicator	1/valve	1/valve
6		Inadequate Core Cooling Monitoring (ICCM) System		
6a	15.	Reactor Vessel Coolant Level Monitor Instrumentation System (RVLIS)	2	1
	16.	Containment Water Level (narrow range)	2	1
7	17.	Containment Sump Water Level (wide range)	2	1
6c	18.	In Core Thermocouples	2 4/core quadrant (c)	2/core quadrant

A.4
M.4
M.3
M.3
A.1
L.5
L.5
A.5
L.5
M.5
M.4

INSERT Notes (a)(b)(c)
M.4
M.5

<Insert>

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ITS 3.3.3

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NORTH ANNA - UNIT 1

A.1

TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

ITS

	INSTRUMENT	CHANNEL CHECK		CHANNEL CALIBRATION	
8	1. Containment Pressure Containment Pressure (Wide Range)	M	3.3.3.1 A.1	R	3.3.3.3 A.1
3	2. Reactor Coolant Inlet Temperature-T_{hot} (wide range)	M		R	
4	3. Reactor Coolant Inlet Temperature-T_{cold} (wide range)	M		R	
5	4. Reactor Coolant Pressure-Wide Range	M		R	
13	5. Pressurizer Water Level	M		R	A.1
17	6. Steam Line Generator Pressure	M		R	
15	7. Steam Generator Water Level-Narrow Range	M		R	
	8. Refueling Water Storage Tank Water Level	M		R	
	9. Boric Acid Tank Solution Level	M		R	
	10. Auxiliary Feedwater Flow Rate	M		R	L.5
6b	11. Reactor Coolant System Subcooling Margin Monitor	M	3.3.3.1 A.1	R	3.3.3.3 A.1
	12. PORV Position Indicator	M		R	
	13. PORV Block Valve Position Indicator	M		R	
	14. Safety Valve Position Indicator	M		R	L.5
6a	15. Reactor Vessel Coolant Level Monitor	M	3.3.3.1 A.1	R	3.3.3.3 A.1
	16. Containment Water Level (narrow range)	M		R	L.5
7	17. Containment Water Level (wide range)	M	3.3.3.1 A.1	R	3.3.3.3 A.1
6c	18. In Core Thermocouples	M		R	

<Insert>

M.4

ITS 3.3.3

3/4 3-51

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CTS 3.3.3.9

INSTRUMENTATION

LOOSE PARTS MONITORING SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.3.3.9 The loose parts monitoring system instrumentation identified in Table 3.3-12 shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION

If all channels of one or more collection regions are inoperable, restore the instrument(s) to OPERABLE status within 30 days or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the channels to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.3.3.9 Each channel of the loose parts monitoring system identified in Table 3.3-12 shall be demonstrated OPERABLE by the performance of:

a. A CHANNEL CHECK at least once per 24 hours.

b. A CHANNEL FUNCTIONAL TEST at least once per 31 days.

c. A CHANNEL CALIBRATION at least once per 18 months.

R.1

CTS 3.3.3.9

4-27-79

TABLE 3.3-12

LOOSE PARTS MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE
1. Steam Generator Transducers	1/steam generator
2. Reactor Vessel Flange Transducers	1/2
3. Reactor Vessel Lower Plenum Transducers	1/2

R.1

Rev. 0

Specification 3/4.3.3.10 has been deleted

INSTRUMENTATION

EXPLOSIVE GAS MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.11 The explosive gas monitoring instrumentation channels shown in Table 3.3-14 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.2.5 are not exceeded.

APPLICABILITY: As shown in Table 3.3-14.

ACTION:

a. With an explosive gas monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above Specification, declare the channel inoperable, and take the ACTION shown in Table 3.3-14.

b. With less than the minimum number of explosive gas monitoring instrumentation channels OPERABLE, for reasons other than a above, take the ACTION shown in Table 3.3-14. Exert best efforts to return the instruments to OPERABLE status within 30 days and, if unsuccessful, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 to explain why the inoperability was not corrected in a timely manner.

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

R.1

SURVEILLANCE REQUIREMENTS

4.3.3.11 Each explosive gas monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3-14.

9-25-91

TABLE 3.3-14

EXPLOSIVE GAS MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
1. DELETED			
2. WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM (Shared with Unit 2)			
a. Oxygen Monitor	1	**	32

** During process vent system operation (treatment for primary system offgasses).

ACTION 32 - With this channel inoperable, operation may continue provided grab samples are taken and analyzed: (1) every 4 hours during degassing operations and (2) daily during other operations.

R.1

TABLE 4.3-14

EXPLOSIVE GAS MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. DELETED					
2. WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM					
a. Oxygen Monitor	D	N.A.	Q(1)	M	**

** During process vent system operation (treatment for primary system offgasses)

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

1. One volume percent oxygen, balance nitrogen, and
2. Four volume percent oxygen, balance nitrogen.

ITS

A.1

6-2-81

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.1 REACTOR COOLANT LOOPS AND COOLANT CIRCULATION

STARTUP AND POWER OPERATION 28

LIMITING CONDITION FOR OPERATION

OPERABLE and A.2

3.4.4 3.4.1.1 All reactor coolant loops shall be in operation with power removed from the loop stop valve operators.

See 3.4.17

Appl. APPLICABILITY: MODES 1 and 2.~~*~~ A.3

ACTION:

Action A With less than the above required reactor coolant loops in operation, be in at least HOT STANDBY within ~~1 hour~~ 6 hours L.1

28

SURVEILLANCE REQUIREMENT

SR 3.4.4.1 4.4.1.1 The above required reactor coolant loops shall be verified to be in operation ~~and circulating reactor coolant~~ at least once per 12 hours. LA.1

4.4.1.2 At least once per 31 days, with the reactor coolant loops in operation by verifying that the power is removed from the loop stop valve operators. See 3.4.17

~~*See Special Test Exception 3.10.4.~~ A.3

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A.1

6-2-81

ITS

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.1 REACTOR COOLANT LOOPS AND COOLANT CIRCULATION

STARTUP AND POWER OPERATION <See ITS 3.4.4>

Each RCS hot and cold leg loop isolation valve shall be open 28 A.2

LIMITING CONDITION FOR OPERATION

LCO 3.4.17 3.4.1.1 All reactor coolant loops shall be in operation with power removed from the loop stop valve operators.

M.1

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

ACTION:

<see ITS 3.4.4>

With less than the above required reactor coolant loops in operation, be in at least HOT STANDBY within 1 hour.

A.3

Action Note Insert proposed Action Note

Action A Insert proposed Action A L.1

28

Action B Insert proposed Action B M.2

SURVEILLANCE REQUIREMENT

4.4.1.1 The above required reactor coolant loops ~~shall be~~ verified to be in operation and circulating reactor coolant at least once per 12 hours. <See ITS 3.4.4>

SR 3.4.17.2 4.4.1.2 At least once per 31 days, with the reactor coolant loops in operation by verifying that the power is removed from the loop stop valve operators.

SR 3.4.17.1 INSERT proposed SR 3.4.17.1 M.3

*See Special Test Exception 3.10.4. <See ITS 3.4.4>

6-2-81

A.1

ITS

REACTOR COOLANT SYSTEM

HOT STANDBY

LIMITING CONDITION FOR OPERATION

3.4.5

3.4.1.2 a. At least two of the reactor coolant loops ~~listed below~~ shall be OPERABLE:

~~1. Reactor Coolant Loop A and its associated steam generator and reactor coolant pump,~~

~~2. Reactor Coolant Loop B and its associated steam generator and reactor coolant pump,~~

~~3. Reactor Coolant Loop C and its associated steam generator and reactor coolant pump,~~

LA.1

b. At least one of the above coolant loops shall be in operation.*

Appl.

APPLICABILITY: MODE 3

ACTION:

Action A
Action B

a. With ~~less than~~ one of the above required reactor coolant loops OPERABLE, restore the required loop to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours. M.1

Action C

~~b. With no reactor coolant loop in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required coolant loop to operation.~~ 28 L.1

Insert proposed Action C

SURVEILLANCE REQUIREMENTS

Insert proposed SR 3.4.5.3 Note

SR 3.4.5.3

4.4.1.2.1 At least the above required reactor coolant pumps, if not in operation, shall be determined to be OPERABLE once per 7 days by verifying correct breaker alignments and indicated power availability. L.2

SR 3.4.5.1

4.4.1.2.2 At least one cooling loop shall be verified to be in operation ~~and circulating reactor coolant~~ at least once per 12 hours. LA.2

M.3

LCO NOTE

*All reactor coolant pumps may be de-energized for up to 1 hour per 8 hour period provided ~~(1) no operations are permitted that would cause dilution of the reactor coolant system boron concentration,~~ and (2) core outlet temperature is maintained at least 10°F below saturation temperature. L.1

Insert proposed LCO Note a

3.4.5.2

Verify steam generator secondary side water levels are ≥ 17% for required RCS loops every 12 hours. M.2

A.1

10-05-94

ITS

REACTOR COOLANT SYSTEM

SHUTDOWN

LIMITING CONDITION FOR OPERATION

Consisting of any combination of RCS loops and RHR loops

LCO 3.4.6

3.4.1.3 a. At least two of the ~~coolant loops listed below~~ shall be OPERABLE:

~~1. Reactor Coolant Loop A and its associated steam generator and reactor coolant pump,*~~

~~2. Reactor Coolant Loop B and its associated steam generator and reactor coolant pump,*~~

~~3. Reactor Coolant Loop C and its associated steam generator and reactor coolant pump,*~~

~~4. Residual Heat Removal Subsystem A,**~~

~~5. Residual Heat Removal Subsystem B.**~~

LA.1

b. At least one of the above coolant loops shall be in operation.***

L.1

Appl.

APPLICABILITY: MODES 4 and 5 (see ITS 3.4.7 and 3.4.8)

ACTION:

Insert proposed Action A

Action A

~~a. With less than the above required loops OPERABLE, immediately initiate corrective action to return the required loops to OPERABLE status as soon as possible, be in COLD SHUTDOWN within 20 hours.~~

Action B

~~b. With no coolant loop in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required coolant loop to operation.~~

M.1

L.3

Insert proposed Action B

LCO Note 2

* A reactor coolant pump shall not be started with one or more of the RCS cold leg temperatures less than or equal to 235°F unless the secondary water temperature of each steam generator is less than 50°F above each of the RCS cold leg temperatures.

** The offsite or emergency power source may be inoperable in MODE 5. (see ITS 3.4.7 and 3.4.8)

LCO Note 1

*** All reactor coolant pumps and residual heat removal pumps may be de-energized for up to 1 hour per 8 hour period provided ~~1) no operations are permitted that would cause dilution of the reactor coolant system boron concentration,~~ and 2) core outlet temperature is maintained at least 10°F below saturation temperature.

Insert proposed LCO Note a

L.3

M.2

Rev. 0

ITS 3.4.7

A.1

ITS

REACTOR COOLANT SYSTEM

SHUTDOWN

LIMITING CONDITION FOR OPERATION

the secondary side of at least one steam generator shall be ≥17% L.1

LCO 3.4.7

3.4.1.3 a. At least two of the coolant loops listed below shall be OPERABLE:

1. ~~Reactor Coolant Loop A and its associated steam generator and reactor coolant pump,*~~
2. ~~Reactor Coolant Loop B and its associated steam generator and reactor coolant pump,*~~
3. ~~Reactor Coolant Loop C and its associated steam generator and reactor coolant pump,*~~
4. Residual Heat Removal Subsystem A,**
5. Residual Heat Removal Subsystem B.**

b. At least one ~~of the above coolant~~ RHR loop~~s~~ shall be in operation.*** M.1

Appl. APPLICABILITY: MODES ~~4 and~~ 5 See ITS 3.4.6 with RCS loops filled A.2

Action A Action B ACTION: Insert M.2

a. With ~~less than the above required loops OPERABLE~~ immediately initiate corrective action to return the required loops to OPERABLE status as soon as possible; ~~be in COLD SHUTDOWN within 20 hours.~~ A.3

Action C b. ~~With no coolant loop in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required coolant loop to operation.~~ M.2 L.4

Insert proposed Action C

LCO Note 2 Insert proposed LCO Note 2 L.2

LCO Note 4 Insert proposed LCO Note 4 A.5

LCO Note 3 * A reactor coolant pump shall not be started with one or more of the RCS cold leg temperatures less than or equal to 235°F unless the secondary water temperature of each steam generator is less than 50°F above each of the RCS cold leg temperatures.

~~** The offsite or emergency power source may be inoperable in MODE 5.~~ A.4

LCO Note 1 *** All ~~reactor coolant pumps and~~ residual heat removal pumps may be de-energized for up to 1 hour per 8 hour period provided 1) ~~no operations are permitted that would cause dilution of the reactor coolant system boron concentration,~~ and 2) core outlet temperature is maintained at least 10°F below saturation temperature. Insert proposed LCO Note 1a L.1 L.4 M.3

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ITS

REACTOR COOLANT SYSTEM

SHUTDOWN

LIMITING CONDITION FOR OPERATION

LCO 3.4.8

3.4.1.3 a. At least two of the coolant loops listed below shall be OPERABLE:

1. ~~Reactor Coolant Loop A and its associated steam generator and reactor coolant pump,*~~
2. ~~Reactor Coolant Loop B and its associated steam generator and reactor coolant pump,*~~
3. ~~Reactor Coolant Loop C and its associated steam generator and reactor coolant pump,*~~
4. Residual Heat Removal Subsystem A.**
5. Residual Heat Removal Subsystem B.**

(A.2)

b. At least one of the above coolant loops shall be in operation.***

Appl.

APPLICABILITY: MODES ~~4 and~~ 5 <see ITS 3.4.6> with RCS loops not filled (A.3)

Action A

ACTION: One required RHR loop OPERABLE (M.1)

a. With ~~less than the above required loops OPERABLE~~, immediately initiate corrective action to return the required loops to OPERABLE status as soon as possible; ~~be in COLD SHUTDOWN within 20 hours.~~ (A.4)

Action B

b. With ~~no coolant~~ Required RHR loop in operation, ~~suspend all operations involving a reduction in boron concentration of the Reactor Coolant System~~ not and immediately initiate corrective action to return the required ~~coolant~~ RHR loop to OPERABLE status and operation. Insert proposed Action B.1 (A.2) (L.3) (M.1) (A.2)

No required RHR loops OPERABLE or

LCO Note 2

Insert proposed LCO Note 2 (L.1)

Insert proposed LCO Note 1.b (L.3)

* ~~A reactor coolant pump shall not be started with one or more of the RCS cold leg temperatures less than or equal to 235°F unless the secondary water temperature of each steam generator is less than 50°F above each of the RCS cold leg temperatures.~~ (A.2)

** ~~The offsite or emergency power source may be inoperable in MODE 5.~~ (A.5)

LCO Note 1

*** All ~~reactor coolant pumps and~~ residual heat removal pumps may be de-energized for up to 1 hour provided 1) ~~no operations are permitted that would cause dilution of the reactor coolant system boron concentration,~~ and 2) core outlet temperature is maintained at least 10°F below saturation temperature. (A.2) (M.2)

15 minutes when switching from one loop to another

3) no draining operations to further reduce the RCS water volume are permitted

ITS

(A.1)

REACTOR COOLANT SYSTEM

SHUTDOWN

SURVEILLANCE REQUIREMENTS

4.4.1.3.1 ~~The required RHR subsystems shall be demonstrated OPERABLE per Specification 4.7.9.2.~~ (A.2)

Insert proposed SR 3.4.6.3 Note (L.2)

SR 3.4.6.3 4.4.1.3.2 The required reactor coolant pump(s), if not in operation, shall be determined to be OPERABLE once per 7 days by verifying correct breaker alignment and indicated power availability.

SR 3.4.6.2 4.4.1.3.3 The required steam generator(s) shall be determined OPERABLE by verifying secondary side water level to be greater than or equal to 17% at least once per 12 hours.

SR 3.4.6.1 4.4.1.3.4 At least once per 12 hours, verify at least one coolant loop to be in operation ~~and circulating reactor coolant~~ by: (LA.2)

a. Verifying at least one Reactor Coolant Pump is in operation.

or

b. Verifying at least one RHR Loop is in operation ~~and,~~

~~1. if the RCS temperature > 140°F or the time since entry into MODE 3 is < 100 hours, circulating reactor coolant at a flow rate ≥ 3000 gpm.~~

~~or~~

~~2. if the RCS temperature ≤ 140°F and the time since entry into MODE 3 is ≥ 100 hours, circulating reactor coolant at a flow rate ≥ 2000 gpm to remove decay heat.~~ (LA.3)

A.1

8-27-90

ITS

REACTOR COOLANT SYSTEM

SHUTDOWN

SURVEILLANCE REQUIREMENTS

4.4.1.3.1 ~~The required RHR subsystems shall be demonstrated OPERABLE per Specification 4.7.9.2.~~ A.6

SR 3.4.7.3 4.4.1.3.2 The required ~~reactor coolant~~ RHR pump(s), if not in operation, shall be determined to be OPERABLE once per 7 days by verifying correct breaker alignment and indicated power availability. Insert proposed SR 3.4.7.3 Note A.2 L.3

SR 3.4.7.2 4.4.1.3.3 The required steam generator(s) shall be determined OPERABLE by verifying secondary side water level to be greater than or equal to 17% at least once per 12 hours.

SR 3.4.7.1 4.4.1.3.4 At least once per 12 hours, verify ~~at least one~~ required ~~coolant~~ RHR loop to be in operation ~~and circulating reactor coolant~~ by: L.1 LA.1

~~a. Verifying at least one Reactor Coolant Pump is in operation.~~

~~or~~ L.1

b. Verifying ~~at least one~~ required RHR Loop is in operation ~~and,~~

~~1. if the RCS temperature > 140°F or the time since entry into MODE 3 is < 100 hours, circulating reactor coolant at a flow rate ≥ 3000 gpm.~~

~~or~~

~~2. if the RCS temperature ≤ 140°F and the time since entry into MODE 3 is ≥ 100 hours, circulating reactor coolant at a flow rate ≥ 2000 gpm to remove decay heat.~~ LA.2

ITS 3.4.8

8-27-90

ITS

REACTOR COOLANT SYSTEM (A.1)

SHUTDOWN

SURVEILLANCE REQUIREMENTS

4.4.1.3.1 The required RHR subsystems shall be demonstrated OPERABLE per Specification 4.7.9.2. A.6

SR 3.4.8.2 4.4.1.3.2 The required ~~reactor coolant~~ RHR pump(s), if not in operation, shall be determined to be OPERABLE once per 7 days by verifying correct breaker alignment and indicated power availability. Insert proposed SR 3.4.8.2 Note A.2 L.2

4.4.1.3.3 The required steam generator(s) shall be determined OPERABLE by verifying secondary side water level to be greater than or equal to 17% at least once per 12 hours. A.2

SR 3.4.8.1 4.4.1.3.4 At least once per 12 hours, verify ~~at least one~~ required coolant RHR loop to be in operation and circulating reactor coolant by: A.2 LA.1

a. Verifying at least one Reactor Coolant Pump is in operation. A.2

or

b. Verifying at least one RHR Loop is in operation and,

1. if the RCS temperature > 140°F or the time since entry into MODE 3 is < 100 hours, circulating reactor coolant at a flow rate ≥ 3000 gpm. LA.2

or

2. if the RCS temperature ≤ 140°F and the time since entry into MODE 3 is ≥ 100 hours, circulating reactor coolant at a flow rate ≥ 2000 gpm to remove decay heat.

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REACTOR COOLANT SYSTEM

ISOLATED LOOP

when opening the loop isolation valves

LIMITING CONDITION FOR OPERATION

ITS 3.4.18.a.1

3.4.1.4 The boron concentration of an isolated loop shall be ~~maintained~~ greater than or equal to the boron concentration corresponding to the SHUTDOWN MARGIN requirements of Specification 3.1.1.1 or 3.1.1.2 as applicable for the active volume of the Reactor Coolant System, unless the loop has been drained for maintenance. L.1

Appl.

APPLICABILITY: MODES ~~3, 4 and~~ 5. and 6 A.2

ACTION:

Action A.1

With the requirements of the above specification not satisfied, ~~do not open~~ close the isolated loop's stop valves; ~~either increase the boron concentration of the isolated loop to within the limits within 4 hours or borate the unisolated portion of the RCS to a SHUTDOWN MARGIN equivalent to at least 1.77% Δk/k at 200°F within the next 6 hours.~~ L.1

SURVEILLANCE REQUIREMENTS

SR 3.4.18.2

4.4.1.4 The boron concentration of an isolated, undrained loop shall be determined to be greater than or equal to the boron concentration corresponding to the SHUTDOWN MARGIN requirements of Specification 3.1.1.1 or 3.1.1.2 as applicable for the active volume of the Reactor Coolant System ~~at least once per 24 hours and~~ within 1 hour prior to opening either the hot leg or cold leg stop valves of an isolated loop. L.1

Or the boron concentration of LCO 3.9.1 A.2

A.1

10-30-98

ITS

REACTOR COOLANT SYSTEM

ISOLATED LOOP STARTUP - FILLED

LIMITING CONDITION FOR OPERATION

3.4.1.5 A reactor coolant loop cold leg stop valve on an undrained loop shall remain closed with A.C. power removed ~~and its breaker locked open~~* unless: L.3

LCO 3.4.18.a.2 SR 3.4.18.3

a. The isolated loop has been operating on a recirculation flow of greater than or equal to 125 gpm for at least 90 minutes and the temperature at the cold leg of the isolated loop is within 20°F of the highest cold leg temperature of the operating loops, and

b. ~~The reactor is subcritical by at least 1.77 percent Δk/k, or~~ A.3

LCO 3.4.18.b

c. The loop is being backfilled in accordance with Specification 3.4.1.6.

Appl.

APPLICABILITY: MODES ~~3, 4,~~ 5 and 6. A.2

ACTION:

Action B.1 Action C.1

Close the cold leg isolation valve immediately A.4

With the requirements of the above specification not satisfied, ~~suspend startup of the isolated loop.~~ A.C. power shall be removed from the valve ~~and the breaker locked open~~ within 2 hours. M.4 L.3

SURVEILLANCE REQUIREMENTS

SR 3.4.18.1

4.4.1.5.1 The isolated loop cold leg temperature shall be determined to be within 20°F of the highest cold leg temperature of the operating loops within 30 minutes prior to opening the cold leg stop valve.

~~4.4.1.5.2 The reactor shall be determined to be subcritical by at least 1.77 percent Δk/k within 30 minutes prior to opening the cold leg stop valve.~~ A.3

Insert proposed SR 3.4.18.3 M.5

M.2

hot or

the loop shall be isolated. M.1

LCO NOTE

* A cold leg stop valve in a reactor coolant loop may be closed for up to two hours for valve maintenance or testing. If the stop valve is not opened within two hours, A.C. power shall be removed from the valve ~~and the breaker locked open.~~ A.5 L.3

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REACTOR COOLANT SYSTEM

ISOLATED LOOP STARTUP - DRAINED

LIMITING CONDITION FOR OPERATION

ITS

3.4.1.6 Whenever a reactor coolant loop is isolated and drained. A.C. power shall be removed from the loop stop valves ~~and the associated breakers locked open~~. When returning an isolated drained loop to service the following conditions shall be met: L.3

LCO 3.4.18.b NOTE

a. Seal injection may be initiated to the reactor coolant pump in the isolated loop provided that:

1. The isolated loop is drained.

2. The boron concentration of the reactor coolant pump seal injection source is ≥ the boron concentration requirements of Specification 3.9.1 or 3.1.1.2 for the applicable Mode.

LCO 3.4.18.b

b. The cold leg stop valves may be energized and/or opened to fill the loop from the active volume of the Reactor Coolant System provided that:

1. The isolated loop is drained or reactor coolant pump seal injection has been initiated in accordance with Specification 3.4.1.6.a above.

LCO 3.4.18.b.1

2. Pressurizer water ~~volume is ≥ 450 cubic feet~~ level ≥ 32 % A.6

3. ~~A source range neutron flux monitor is operable.~~ A.8

c. Backfilling of the isolated loop ~~may continue~~ provided that: A.6

LCO 3.4.18.b.1

1. Pressurizer water ~~volume~~ level shall be maintained ~~at or above 450 cubic feet~~ ≥ 32 %.

2. ~~The source range neutron flux count rate is no more than a factor of 2 above the initial count rate.~~ L.4

LCO 3.4.18 Note

3. The boron concentration of the reactor coolant pump seal injection source is ≥ the boron concentration requirements of Specification 3.9.1 or 3.1.1.2 for the applicable Mode.

d. When the isolated loop is full the loop stop valves can be fully opened provided that:

SR 3.4.18.7

1. The boron concentration in the loop is ≥ the boron concentration requirements of Specification 3.9.1 or 3.1.1.2 for the applicable Mode.

LCO 3.4.18.a.2

2. The hot and cold leg stop valves are fully opened within 2 hours after the backfill of the isolated loop has been completed.

Appl.

APPLICABILITY: MODES 5 and 6.

ACTION:

SR 3.4.18.4

a. If the isolated loop is not drained then it must be fully drained before initiating seal injection to the reactor coolant pump in the loop or initiating backfill.

REACTOR COOLANT SYSTEM

ISOLATED LOOP STARTUP - DRAINED

ITS

LIMITING CONDITION FOR OPERATION

ACTION: (Continued) A.6

Action D b. If the pressurizer water ~~volume~~ level is not maintained ~~at 450 cubic feet or greater~~ ≥ 32% then the loop stop valves on the loop being backfilled shall be closed. ~~A.C. power shall be removed from the loop stop valves and the breakers locked open.~~ A.7 L.3

Action D c. If the boron concentration of the RCP seal injection makeup source is not maintained ≥ the boron concentration requirements of Specification 3.9.1 or 3.1.1.2 for the applicable Mode, then the loop stop valve on the loop being backfilled shall be ~~closed and the loop drained or apply Specification 3.4.1.4 or 3.4.1.5~~ isolated. A.9

~~d. If the source range count rate increases by a factor of two over the initial count rate, then the hot and cold leg loop stop valves shall be reclosed, power removed from the breakers and the breakers locked open. No attempt shall be made to reopen the loop stop valves until the reason for the count rate increase has been determined.~~ L.4

Action E e. If the loop stop valves are not fully open within 2 hours after the loop is filled or Surveillance Requirement 4.4.1.6.5 is not met, then the loop shall be isolated ~~and drained or apply Specification 3.4.1.4 and 3.4.1.5~~ A.9

Action F Insert proposed Action F M.3

SURVEILLANCE REQUIREMENTS

SR 3.4.18.4 4.4.1.6.1 The isolated loop shall be verified drained within 2 hours prior to initiating seal injection to the reactor coolant pump in the isolated loop or opening the loop stop valve for backfilling the loop from the Reactor Coolant System.

SR 3.4.18.6 4.4.1.6.2 The pressurizer water ~~volume~~ level shall be verified to be ≥ ~~450 cubic feet~~ 32% at least once per 15 minutes during filling of the isolated loop. A.6

~~4.4.1.6.3 The source range neutron flux monitor shall be demonstrated OPERABLE by performance of:~~

~~a. A CHANNEL FUNCTIONAL TEST within 8 hours prior to commencing isolated loop backfill, and~~

~~b. A CHANNEL CHECK at least once per 15 minutes during backfilling of an isolated loop.~~ L.2

SR 3.4.18.5 4.4.1.6.4 If using blended makeup flow as the source for reactor coolant pump seal injection, the boron concentration shall be verified to be ≥ the boron concentration requirements of TS 3.9.1 or TS 3.1.1.2 for the applicable Mode.

a. Within 1 hour prior to initiating seal injection to the reactor coolant pump in the isolated loop, and

b. once every hour after initiating seal injection to the reactor coolant pump.

SR 3.4.18.7 4.4.1.6.5 The backfilled loop's boron concentration shall be verified to be ≥ the boron concentration requirements of TS 3.9.1 or TS 3.1.1.2 for the applicable Mode within 1 hour prior to fully opening the cold leg loop stop valve or opening the hot leg loop stop valve in the isolated loop.

A.1

04-01-96

ITS

REACTOR COOLANT SYSTEM

SAFETY VALVES – SHUTDOWN

LIMITING CONDITION FOR OPERATION

three

M.3

LCO 3.4.10

SR 3.4.10.1

Appl.

3.4.2 A minimum of one pressurizer code safety valve shall be OPERABLE with a lift setting of 2485 PSIG ± 3% as-found and ± 1% as-left. <Moved to SR 3.4.10.1>

L.1

APPLICABILITY: MODE 4.* with all RCS cold leg temperatures > 235°F (Unit 1), 270°F (Unit 2)

L.2

Action A

Action B

ACTION:

~~With no pressurizer code safety valve OPERABLE, immediately suspend all operations involving positive reactivity changes and place an OPERABLE RHR loop into operation.~~

Insert proposed Condition A

Insert proposed Condition B

SURVEILLANCE REQUIREMENTS

SR 3.4.10.1

~~4.4.2 No additional Surveillance Requirements other than those required by Specification 4.0.5.~~

A.2

Insert proposed SR 3.4.10.1

, +2%/-3% average with no single valve outside +/- 3%

A.3

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

LA.1

(A.1) 04-01-96

ITS

REACTOR COOLANT SYSTEM

SAFETY AND RELIEF VALVES – OPERATING

SAFETY VALVES

LIMITING CONDITION FOR OPERATION

LCO 3.4.10 SR 3.4.10.1

3.4.3.1 All pressurizer code safety valves shall be OPERABLE with a lift setting of 2485 PSIG + 2% / - 3% average as-found with no single valve outside ± 3% and ± 1% per valve as-left.*

<Moved to SR 3.4.10.1> L.3

Appl.

APPLICABILITY: MODES 1, 2 and 3. Insert Proposed Applicability Note M.1

ACTION:

Action A Action B

With one pressurizer code safety valve inoperable, either restore the inoperable valve to OPERABLE status within 15 minutes or be in MODE 3 in 6 hours and HOT SHUTDOWN with any RCS cold leg temperature ≤ 235°F (unit 1), 270°F (unit 2) within ~~12~~ 24 hours. L.4 M.2

SURVEILLANCE REQUIREMENTS

SR 3.4.10.1

~~4.4.3.1 No additional Surveillance Requirements other than those required by Specification 4.0.5.~~

Insert proposed SR 3.4.10.1 A.2

~~* The lift setting pressure shall correspond to ambient conditions of the valve at nominal temperature and pressure..~~ LA.1

A.1

ITS 3.4.11

REACTOR COOLANT SYSTEM

SAFETY AND RELIEF VALVES – OPERATING

RELIEF VALVES

ITS

LIMITING CONDITION FOR OPERATION

LCO 3.4.11

3.4.3.2 Both power-operated relief valves (PORVs) and their associated block valves shall be OPERABLE.

App.

APPLICABILITY: MODES 1, 2, and 3.

Insert proposed Action Note 1 A.2

ACTION:

A. PORV(s):

Action B, E

and capable of being manually cycled A.3

1. With one or both PORV(s) inoperable ~~solely because of excessive seat leakage~~ within 1 hour either restore the PORV(s) to OPERABLE status or close the associated block valve(s) with power maintained to the block valve(s); otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

and capable of being manually cycled A.3

Action A. E.

2. (Risk Informed) With one or both PORV(s) inoperable because of (an) inoperable backup nitrogen supply(ies), within 14 days either restore the PORV(s) backup nitrogen supply(ies) to OPERABLE status or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

~~3. With one or both PORV(s) inoperable due to a malfunction in the PORV automatic control system, within 1 hour restore the affected automatic control system(s) to OPERABLE status or place and maintain the affected PORV(s) in manual control.~~ L.3

Action C, E

4. With one PORV inoperable ~~due to causes other than those addressed in ACTIONS A.1, A.2 or A.3 above~~, within 1 hour either restore the PORV to OPERABLE status or close its associated block valve and remove power from the block valve; restore the PORV to OPERABLE status within the following 72 hours or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. A.3

and not capable of being manually cycled

Action F

5. With both PORVs inoperable ~~such that ACTIONS A.1, A.2 or A.3 above do not apply~~, within 1 hour either restore at least one PORV to OPERABLE status or close the associated block valves and remove power from the block valves and be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. A.3

Action Note 2

6. The provisions of Specification 3.0.4 are not applicable. Move to Note 2 for Actions

ITS

REACTOR COOLANT SYSTEM

SAFETY AND RELIEF VALVES – OPERATING

RELIEF VALVES

LIMITING CONDITION FOR OPERATION

ACTION: (Continued)

B. Block Valves: Insert proposed Action D Note (L.2)

Action D, E 1. With one block valve inoperable, within 1 hour either restore the block valve to OPERABLE status or place its associated PORV in manual control; restore the block valve 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. Insert proposed Action G Note (L.2)

Action G 2. With both block valves inoperable, ~~within 1 hour either restore the block valves to OPERABLE status or place the PORVs in manual control;~~ restore at least one block valve to OPERABLE status within ~~the next~~ 2 hour(s); ~~restore the remaining inoperable block valve 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.~~ (A.4) (A.4)

Action note 2 3. The provisions of Specification 3.0.4 are not applicable. Move to Note 2 for Actions

SURVEILLANCE REQUIREMENTS

4.4.3.2.1 ~~In addition to the requirements of Specification 4.0.5,~~ each PORV shall be demonstrated OPERABLE: (A.1)

a. At least once per 31 days by performing a CHANNEL FUNCTIONAL TEST, excluding valve operation, and (See ITS 3.3.1)

b. At least once per 18 months by:

SR 3.4.11.3 1. Operating the PORV through one complete cycle of full travel ~~during MODES 3 or 4~~ ~~and~~ (LA.1)

SR 3.4.11.4 2. Operating the solenoid air control valves and check valves on the associated accumulators in the PORV control systems through one complete cycle of full travel, and

3. Performing a CHANNEL CALIBRATION of the actuation instrumentation. (See ITS 3.3.1)

SR 3.4.11.1 c. At least once per 7 days by verifying that the pressure in the PORV nitrogen accumulators is greater than the surveillance limit.

SR 3.4.11.2 4.4.3.2.2 Each block valve shall be demonstrated OPERABLE at least once per 92 days by operating the valve through one complete cycle of full travel unless the block valve is closed in order to meet the requirements of ACTION A.4 or A.5 in Specification 3.4.3.2. This Surveillance is only required to be met in MODES 1 and 2 (L.1)

A.1

03-01-99

ITS

REACTOR COOLANT SYSTEM

PRESSURIZER

LIMITING CONDITION FOR OPERATION

LCO 3.4.9 3.4.4 The pressurizer shall be OPERABLE with two groups of pressurizer heaters OPERABLE with the capacity of each group greater than or equal to 125 kW and capable of being powered from its associated emergency bus, and a water ~~volume~~ level of less than or equal to ~~1240 cubic feet~~ 93%. A.2

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

ACTION:

Action B+C a. With one required group of pressurizer heaters inoperable, restore the required group of pressurizer heaters 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. A.3

Action A b. With the pressurizer ~~otherwise inoperable~~ Water level not within limit be in at least HOT STANDBY with ~~the reactor trip breakers open~~ all rods fully inserted and the Rod Control System in a configuration incapable of rod withdrawal. within 6 hours and in HOT SHUTDOWN within the following 6 hours. L.1

SURVEILLANCE REQUIREMENTS

SR 3.4.9.1 4.4.4.1 The pressurizer water ~~volume~~ level shall be determined to be within its limit at least once per 12 hours. A.2

SR 3.4.9.2 Verify capacity of each required group of pressurizer heaters is ≥ 125 Kw every 18 months. M.1

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ITS 3.4.13

A.1

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ITS

REACTOR COOLANT SYSTEM

STEAM GENERATORS

LIMITING CONDITION FOR OPERATION

~~3.4.5 Each steam generator in a non-isolated reactor coolant loop shall be OPERABLE.~~ LA.1

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

~~ACTION:~~

~~With one or more steam generators in non-isolated reactor coolant loops inoperable, restore the inoperable generator(s) to OPERABLE status prior to increasing T_{avg} above 200°F.~~

SURVEILLANCE REQUIREMENTS

SR 3.4.13.2 ~~4.4.5.0 Each steam generator shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the required Specification 4.0.5.~~ A.4

4.4.5.1 Steam Generator Sample Selection and Inspection - Each steam generator shall be determined OPERABLE during shutdown by selecting and inspecting at least the minimum number of steam generators specified in Table 4.4-1.

4.4.5.2 Steam Generator Tube Sample Selection and Inspection - The steam generator tube minimum sample size, inspection result classification, and the corresponding action required shall be as specified in Table 4.4-2. The inservice inspection of steam generator tubes shall be performed at the frequencies specified in Specification 4.4.5.3 and the inspected tubes shall be verified acceptable per the acceptance criteria of Specification 4.4.5.4. The tubes selected for each inservice inspection shall include at least 3% of the total number of tubes in all steam generators; the tubes selected for these inspections shall be selected on a random basis except: See ITS 5.0

a. Where experience in similar plants with similar water chemistry indicates critical areas to be inspected, then at least 50% of the tubes inspected shall be from these critical areas.

b. The first sample of tubes selected for each inservice inspection (subsequent to the preservice inspection) of each steam generator shall include:

SR 3.4.12.2 Insert proposed SR 3.4.13.2 A.4

(A.1)

ITS 5.0

5.5.9 Steam Generator (SG) Tube Surveillance Program

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ITS

REACTOR COOLANT SYSTEM

STEAM GENERATORS

LIMITING CONDITION FOR OPERATION

~~3.4.5 Each steam generator in a non-isolated reactor coolant loop shall be OPERABLE.~~

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

~~ACTION:~~

~~With one or more steam generators in non-isolated reactor coolant loops inoperable, restore the inoperable generator(s) to OPERABLE status prior to increasing T_{avg} above 200°F.~~

See ITS 3.4.13

~~SURVEILLANCE REQUIREMENTS~~

~~4.4.5.0 Each steam generator shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the required Specification 4.0.5.~~ (A.7)

The provisions of SR 3.0.2 are applicable to the SG Tube Surveillance Program Test Frequencies

5.5.8.1 4.4.5.1 Steam Generator Sample Selection and Inspection - Each steam generator shall be determined OPERABLE during shutdown by selecting and inspecting at least the minimum number of steam generators specified in Table $\boxed{4.4-1}$. 5.5.8-1

5.5.8.2 4.4.5.2 Steam Generator Tube Sample Selection and Inspection - The steam generator tube minimum sample size, inspection result classification, 5.5.8-2 and the corresponding action required shall be as specified in Table $\boxed{4.4-2}$. The inservice inspection of steam generator tubes shall be performed at the frequencies specified in Specification $\boxed{4.4.5.3}$ and the inspected 5.5.8.3 tubes shall be verified acceptable per the acceptance criteria of Specification $\boxed{4.4.5.4}$. The tubes selected for each inservice inspection (A.20)

5.5.8.4 shall include at least 3% of the total number of tubes in all steam generators; the tubes selected for these inspections shall be selected on a random basis except:

5.5.8.2.a a. Where experience in similar plants with similar water chemistry indicates critical areas to be inspected, then at least 50% of the tubes inspected shall be from these critical areas.

5.5.8.2.b b. The first sample of tubes selected for each inservice inspection (subsequent to the preservice inspection) of each steam generator shall include:

A.1

ITS 5.0

ITS

5.5.8.2.b.1 1. All nonplugged tubes that previously had detectable wall penetrations >20%, and

5.5.8.2.b.2 2. Tubes in those areas where experience has indicated potential problems.

5.5.8.2.b.3 3. A tube inspection (pursuant to Specification ~~4.4.5.4~~ 5.5.8.4 a.8) shall be performed on each selected tube. If any selected tube does not permit the passage of the eddy current probe for a tube inspection, this shall be recorded and an adjacent tube shall be selected and subjected to a tube inspection. A.20

5.5.8.2.c c. The tubes selected as the second and third samples (if required by Table ~~4.4-2~~ 5.5.8-2) during each inservice inspection may be subjected to a partial tube inspection provided: A.20

5.5.8.2.c.1 1. The tubes selected for these samples include the tubes from those areas of the tube sheet array where tubes with imperfections were previously found.

5.5.8.2.c.2 2. The inspections include those portions of the tubes where imperfections were previously found.

The results of each sample inspection shall be classified into one of the following three categories:

Category	Inspection Results
C-1	Less than 5% of the total tubes inspected are degraded tubes and none of the inspected tubes are defective.
C-2	One or more tubes, but not more than 1% of the total tubes inspected are defective, or between 5% and 10% of the total tubes inspected are degraded tubes.
C-3	More than 10% of the total tubes inspected are degraded tubes or more than 1% of the inspected tubes are defective.

Note: In all inspections, previously degraded tubes must exhibit significant >10% further wall penetrations to be included in the above percentage calculations.

A.1

ITS 5.0

ITS

5.5.8.3 4.4.5.3 Inspection Frequencies - The above required inservice inspections of steam generator tubes shall be performed at the following frequencies:

5.5.8.3.a a. The first inservice inspection shall be performed after 6 Effective Full Power Months but within 24 calendar months of initial criticality. Subsequent inservice inspections shall be performed at intervals of not less than 12 nor more than 24 calendar months after the previous inspection. If two consecutive inspections following service under AVT conditions, not including the preservice inspection, result in all inspection results falling into the C-1 category or if two consecutive inspections demonstrate that previously observed degradation has not continued and no additional degradation has occurred, the inspection interval may be extended to a maximum of once per 40 months.

5.5.8.3.b b. If the results of the inservice inspection of a steam generator conducted in accordance with Table ~~4.4-2~~ 5.5.8-2 at 40 month intervals fall into Category C-3, the inspection frequency shall be increased to at least once per 20 months. The increase in inspection frequency shall apply until the subsequent inspections satisfy the criteria of Specification ~~4.4.5.3.a~~ 5.5.8.3.a; the interval may then be extended to a maximum of once per 40 months.

A.20

5.5.8.3.c c. Additional, unscheduled inservice inspections shall be performed on each steam generator in accordance with the first sample inspection specified in Table ~~4.4-2~~ 5.5.8-2 during the shutdown subsequent to any of the following conditions:

1. Primary-to-secondary tubes leaks (not including leaks originating from tube-to-tube sheet welds) in excess of the limits of Specification ~~3.4.6.2~~ 3.4.13.

2. A seismic occurrence greater than the Operating Basis Earthquake.

3. A loss-of-coolant accident requiring actuation of the engineered safeguards.

4. A major steam line or feedwater line break.

ITS

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

5.5.8.4 4.4.5.4 Acceptance Criteria

a. As used in this Specification:

1. Imperfection means an exception to the dimensions, finish or contour of a tube from that required by fabrication drawings or specifications. Eddy-current testing indications below 20% of the nominal tube wall thickness, if detectable, may be considered as imperfections.

2. Degradation means a service-induced cracking, wastage, wear or general corrosion occurring on either inside or outside of a tube.

3. Degraded Tube means a tube containing imperfections ≥20% of the nominal wall thickness caused by degradation.

4. % Degradation means the percentage of the tube wall thickness affected or removed by degradation.

5. Defect means an imperfection of such severity that it exceeds the plugging limit. A tube containing a defect is defective.

6. Plugging Limit means the imperfection depth at or beyond which the tube shall be removed from service because it may become unserviceable prior to the next inspection and is equal to 40% of the nominal tube wall thickness.

7. Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break as specified in ~~4.4.5.3.c~~ 5.5.8.3.c, above. (A.20)

8. Tube Inspection means an inspection of the steam generator tube from the point of entry completely around the U-bend to the top support.

5.5.8.4

9. Preservice Inspection means an inspection of the full length of each tube in each steam generator performed by eddy current techniques prior to service to establish a baseline condition of the tubing. This inspection shall be performed using the equipment and techniques expected to be used during subsequent inservice inspection.

b. The steam generator shall be determined OPERABLE after completing the corresponding actions (plug all tubes exceeding the plugging limit and all tubes containing through-wall cracks) required by Table ~~4.4-2~~ 5.5.8-2 A.20

5.6.7

4.4.5.5 Reports

a. Following each inservice inspection of steam generator tubes, the number of tubes plugged in each steam generator shall be reported to the Commission within 15 days.

b. The complete results of the steam generator tube inservice inspection shall be reported on an annual basis for the period in which this inspection was completed. This report shall include:

1. Number and extent of tubes inspected.
2. Location and percent of wall-thickness penetration for each indication of an imperfection.
3. Identification of tubes plugged.

c. Results of steam generator tube inspections which fall into Category C-3 require prompt notification of the Commission pursuant to Section 50.72 to 10 CFR Part 50. A Licensee Event Report shall be submitted pursuant to Section 50.73 to 10 CFR Part 50 and shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence.

STEAM GENERATOR (SG) TUBE SURVEILLANCE PROGRAM

TABLE ~~4.4-1~~ 5.5.8-1

MINIMUM NUMBER OF STEAM GENERATORS TO BE INSPECTED DURING INSERVICE INSPECTION

Preservice Inspection	No			Yes		
No. of Steam Generators per Unit	Two	Three	Four	Two	Three	Four
First Inservice Inspection	All			One	Two	Two
Second & Subsequent Inservice Inspections	One[1]			One[1]	One[2]	One[3]

Table Notation:

1. The inservice inspection may be limited to one steam generator on a rotating schedule encompassing 3 N % of the tubes (where N is the number of steam generators in the plant) if the results of the first or previous inspections indicate that all steam generators are performing in a like manner. Note that under some circumstances, the operating conditions in one or more steam generators may be found to be more severe than those in other steam generators. Under such circumstances the sample sequence shall be modified to inspect the most severe conditions.

2. The other steam generator not inspected during the first inservice inspection shall be inspected. The third and subsequent inspections should follow the instructions described in 1 above.

3. Each of the other two steam generators not inspected during the first inservice inspections shall be inspected during the second and third inspections. The fourth and subsequent inspections shall follow the instructions described in 1 above.

A.1

A.20

STEAM GENERATOR (SG) TUBE SURVEILLANCE PROGRAM

Table 5.5.8-2

TABLE 4.4-2

STEAM GENERATOR TUBE INSPECTION

1ST SAMPLE INSPECTION			2ND SAMPLE INSPECTION		3RD SAMPLE INSPECTION	
Sample Size	**Result**	**Action Required**	**Result**	**Action Required**	**Result**	**Action Required**
A minimum of S Tubes per S. G.	C–1	None	N/A	N/A	N/A	N/A
	C–2	Plug defective tubes and inspect additional 2S tubes in this S. G.	C–1	None	N/A	N/A
			C–2	Plug defective tubes and inspect additional 4S tubes in this S. G.	C–1	None
					C–2	Plug defective tubes
					C–3	Perform action for C–3 result of first sample
			C–3	Perform action for C–3 result of first sample	N/A	N/A
	C–3	Inspect all tubes in this S. G., plug defective tubes and inspect 2S tubes in each other S. G.	All other S. G.s are C–1	None	N/A	N/A
			Some S. G.s C–2 but no additional S. G. are C–3	Perform action for C–2 result of second sample	N/A	N/A
			Additional S. G. is C–3	Inspect all tubes in each S. G. and plug defective tubes. Report to NRC ~~& obtain approval prior to operation~~ pursuant to 5.6.7.c	N/A	N/A

$S = 3\frac{N}{n}\%$ Where N is the number of steam generators in the unit, and n is the number of steam generators inspected during an inspection

L.22

A.1

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ITS

REACTOR COOLANT SYSTEM

3/4.4.6 REACTOR COOLANT SYSTEM LEAKAGE

LEAKAGE DETECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.15 3.4.6.1 The following Reactor Coolant System leakage detection systems shall be OPERABLE:

b a. The containment atmosphere particulate ~~and~~ or gaseous radioactivity monitoring system, and L.3

a b. On ~~The~~ containment sump (level ~~and~~ or discharge flow) monitor ~~measurement system~~. A.3

Appl. APPLICABILITY: MODES 1, 2, 3 and 4. Insert proposed REQUIRED ACTIONS NOTE L.2 M.1

Insert proposed ACTION B.1.1

ACTION: INSERT proposed Action Note L.1

Action A.2, B.1.2
Action A.1, B.2
Action C.1
Action C.2

With one of the above required leakage detection systems inoperable, operation may continue for up to 30 days provided a RCS leakrate calculation (Specification 4.4.6.2.1.d) is performed at least once per 24 hours. Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

INSERT proposed Action D.1

SURVEILLANCE REQUIREMENTS A.2

4.4.6.1 The leakage detection systems shall be demonstrated OPERABLE by:

SR 3.4.15.1 SR 3.4.15.2 SR 3.4.15.4 a. Containment atmosphere particulate and gaseous radioactivity monitoring system - performance of CHANNEL CHECK, CHANNEL CALIBRATION, and CHANNEL FUNCTIONAL TEST at the frequencies specified in Table 4.3-3,

SR 3.4.15.3 b. Containment sump level and discharge flow measurement system - performance of CHANNEL CALIBRATION at least once per 18 months.

A.1

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ITS

REACTOR COOLANT SYSTEM

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.6.2 Reactor Coolant System leakage shall be limited to:

LCO 3.4.13.a
a. No PRESSURE BOUNDARY LEAKAGE,

LCO 3.4.13.b
b. 1 GPM UNIDENTIFIED LEAKAGE,

LCO 3.4.13.d
LCO 3.4.13.e
c. 1 GPM total primary-to-secondary leakage through all steam generators ~~not isolated from the Reactor Coolant System~~ and 500 gallons per day through any one steam generator ~~not isolated from the Reactor Coolant System,*~~ A.2 A.3

LCO 3.4.13.c
d. 10 GPM IDENTIFIED LEAKAGE from the Reactor Coolant System,

e. 30 GPM CONTROLLED LEAKAGE at a Reactor Coolant System pressure of 2235 ± 20 psig, and <See ITS 3.5.5>

f. Leakage for the Reactor Coolant System Pressure Isolation Valves specified in Table 3.4-1. <See ITS 3.4.14>

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

ACTION:

Condition B
a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

Condition A
Condition B
b. With any Reactor Coolant System leakage greater than any one of the above limits, excluding PRESSURE BOUNDARY LEAKAGE and leakage from the Reactor Coolant System Pressure Isolation Valves, reduce the leakage rate to within limits within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. <See ITS 3.4.14>

c. With any Reactor Coolant System Pressure Isolation Valve leakage greater than the above limit, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. <See ITS 3.4.14>

~~*When in Mode 1 above 50% power, provisions of Specification 3.4.6.3 apply.~~ A.3

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A.1

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ITS

REACTOR COOLANT SYSTEM

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.6.2 Reactor Coolant System leakage shall be limited to:

a. No PRESSURE BOUNDARY LEAKAGE,

b. 1 GPM UNIDENTIFIED LEAKAGE,

c. 1 GPM total primary-to-secondary leakage through all steam generators not isolated from the Reactor Coolant System and 500 gallons per day through any one steam generator not isolated from the Reactor Coolant System,*

d. 10 GPM IDENTIFIED LEAKAGE from the Reactor Coolant System,

See ITS 3.4.13

e. 30 GPM CONTROLLED LEAKAGE at a Reactor Coolant System pressure of 2235 ± 20 psig, and

See ITS 3.5.5

LCO 3.4.14 A.2

f. Leakage for the Reactor Coolant System Pressure Isolation Valves ~~specified in Table 3.4-1~~ required to be tested shall be within limit LA.1

L.2

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

Insert proposed 3.4.14 ACTION NOTE 1

ACTION:

a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

See ITS 3.4.13

Insert proposed 3.4.14 ACTION NOTE 2

b. With any Reactor Coolant System leakage greater than any one of the above limits, excluding PRESSURE BOUNDARY LEAKAGE ~~and leakage from the Reactor Coolant System Pressure Isolation Valves~~, reduce the leakage rate to within limits within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

L.3

See 3.4.13

Action A

Insert proposed 3.4.14 ACTION A

L.3

c. ~~With any Reactor Coolant System Pressure Isolation Valve leakage greater than the above limit,~~ Required Action and associated Completion Time for Condition A not met, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Action B L.3

*When in Mode 1 above 50% power, provisions of Specification 3.4.6.3 apply.

See ITS 3.4.13

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LCO 3.5.5 Seal Injection Flow

A.1

A.1

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ITS

REACTOR COOLANT SYSTEM

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.6.2 Reactor Coolant System leakage shall be limited to:

a. No PRESSURE BOUNDARY LEAKAGE,

b. 1 GPM UNIDENTIFIED LEAKAGE,

c. 1 GPM total primary-to-secondary leakage through all steam generators not isolated from the Reactor Coolant System and 500 gallons per day through any one steam generator not isolated from the Reactor Coolant System,*

d. 10 GPM IDENTIFIED LEAKAGE from the Reactor Coolant System,

See ITS 3.4.13

LCO 3.5.5

e. 30 GPM CONTROLLED LEAKAGE at a Reactor Coolant System pressure of 2235 ± 20 psig, and

f. Leakage for the Reactor Coolant System Pressure Isolation Valves specified in Table 3.4-1.

See 3.4.14

APPLICABILITY: MODES 1, 2, 3 and 4

L.1

ACTION:

a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

See 3.4.13

Action A

Action B

b. With ~~any Reactor Coolant System leakage greater than any one of the above limits, excluding PRESSURE BOUNDARY LEAKAGE and leakage from the Reactor Coolant System Pressure Isolation Valves~~, reduce the leakage rate to within ~~limits~~ within 4 hours or be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN within the following 30 hours~~. MODE 4 in 12 hours

INSERT

A.2

L.1

c. With any Reactor Coolant System Pressure Isolation Valve leakage greater than the above limit, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

See ITS 3.4.14

*When in Mode 1 above 50% power, provisions of Specification 3.4.6.3 apply.

See ITS 3.4.13

A.1

ITS

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS

4.4.6.2.1 Reactor Coolant System leakages shall be demonstrated to be within each of the above limits by: 22

L.1

a. ~~Monitoring the containment atmosphere particulate radioactivity monitoring at least once per 12 hours.~~ L.2

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

Insert proposed SR 3.4.13.1 Note

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, (See ITS 3.5.5)

SR 3.4.13.1

d. Performance of a Reactor Coolant System water inventory balance at least once per 72 hours during steady state operation, and

e. ~~Monitoring the reactor head flange leakoff temperature at least once per 24 hours.~~ L.2

4.4.6.2.2 Each Reactor Coolant System Pressure Isolation Valve specified in Table 3.4.1 shall be individually demonstrated OPERABLE by verifying leakage* to be within its limit:

a. Prior to entering MODE 2 after each refueling,

b. Prior to entering MODE 2 whenever the plant has been in COLD SHUTDOWN for 72 hours or more and if leakage testing has not been performed in the previous 9 months, and 22

c. Prior to returning the valve to service following maintenance, repair or replacement work on the valve.

See ITS 3.4.14

*To satisfy ALARA requirements, leakage may be measured indirectly (as from the performance of pressure indicators) if accomplished in accordance with approved procedures and supported by computations showing that the method is capable of demonstrating valve compliance with the leakage criteria. 22

A.1

ITS

SURVEILLANCE REQUIREMENTS

See 3.4.13

4.4.6.2.1 Reactor Coolant System leakages shall be demonstrated to be within each of the above limits by: 22

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

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

See 3.5.5

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,

See 3.4.13

d. Performance of a Reactor Coolant System water inventory balance at least once per 72 hours during steady state operation, and

e. Monitoring the reactor head flange leakoff temperature at least once per 24 hours.

Insert proposed SR 3.4.14.1

SR 3.4.14.1

~~4.4.6.2.2~~ Each ~~Reactor Coolant System Pressure Isolation Valve specified in Table 3.4.1~~ ~~shall be individually demonstrated OPERABLE by verifying~~ leakage* to be within its ~~limit~~:

L.7

In accordance with the Inservice Testing Program, and 18 months

a. ~~Prior to entering MODE 2 after each refueling,~~ A.4

b. Prior to ~~entering~~ MODE 2 whenever the plant has been in COLD SHUTDOWN for 72 hours or more and if leakage testing has not been performed in the previous 9 months, and 22 L.4

7 days

c. ~~Prior to returning the valve to service following maintenance, repair or replacement work on the valve.~~ L.5

Insert proposed SR 3.4.14.1, NOTE 1 A.3

within 24 hours following valve actuation due to automatic or manual action or flow through the valve. M.1

Insert proposed SR 3.4.14.1, NOTE 2 L.1

Insert proposed SR 3.4.14.1, NOTE 3 M.1

LA.2

~~*To satisfy ALARA requirements, leakage may be measured indirectly (as from the performance of pressure indicators) if accomplished in accordance with approved procedures and supported by computations showing that the method is capable of demonstrating valve compliance with the leakage criteria.~~ 22

A.1

ITS

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS

4.4.6.2.1 Reactor Coolant System leakages shall be demonstrated to be within each of the above limits by: | 22

See ITS 3.4.13

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

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

SR 3.5.5.1

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,

Insert ITS SR 3.5.5.1 NOTE

LCO 3.5.5

See ITS 3.4.13

d. Performance of a Reactor Coolant System water inventory balance at least once per 72 hours during steady state operation, and

e. Monitoring the reactor head flange leakoff temperature at least once per 24 hours.

4.4.6.2.2 Each Reactor Coolant System Pressure Isolation Valve specified in Table 3.4.1 shall be individually demonstrated OPERABLE by verifying leakage* to be within its limit:

a. Prior to entering MODE 2 after each refueling,

b. Prior to entering MODE 2 whenever the plant has been in COLD SHUTDOWN for 72 hours or more and if leakage testing has not been performed in the previous 9 months, and | 22

c. Prior to returning the valve to service following maintenance, repair or replacement work on the valve.

See ITS 3.4.14

*To satisfy ALARA requirements, leakage may be measured indirectly (as from the performance of pressure indicators) if accomplished in accordance with approved procedures and supported by computations showing that the method is capable of demonstrating valve compliance with the leakage criteria. | 22

A.1

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TABLE 3.4.1

REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVES

System	Valve No.	Maximum (a)(b) Allowable Leakage
Low Head Safety Injection to Cold Legs		
Loop 1	1-SI-83	≤ 5 gpm
	1-SI-195	≤ 5 gpm
Loop 2	1-SI-86	≤ 5 gpm
	1-SI-197	≤ 5 gpm
Loop 3	1-SI-89	≤ 5 gpm
	1-SI-199	≤ 5 gpm

22

Footnotes:

(a) 1. Leakage rates less than or equal to 1.0 gpm are considered acceptable.

2. Leakage rates greater than 1.0 gpm but less than or equal to 5.0 gpm are considered acceptable if the latest measured rate has not exceeded the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.

3. Leakage rates greater than 1.0 gpm but less than or equal to 5.0 gpm are considered unacceptable if the latest measured rate exceeded the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.

4. Leakage rates greater than 5.0 gpm are considered unacceptable.

(b) Minimum differential test pressure shall not be less than 150 psid.

See ITS 3.4.14

A.1

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TABLE 3.4.1

REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVES

System	Valve No.	Maximum (a)(b) Allowable Leakage
Low Head Safety Injection to Cold Legs		
Loop 1	1-SI-83 1-SI-195	≤ 5 gpm ≤ 5 gpm
Loop 2	1-SI-86 1-SI-197	≤ 5 gpm ≤ 5 gpm
Loop 3	1-SI-89 1-SI-199	≤ 5 gpm ≤ 5 gpm

LA.1

22

Footnotes:

(a) 1. Leakage rates less than or equal to 1.0 gpm are considered acceptable.

2. Leakage rates greater than 1.0 gpm but less than or equal to 5.0 gpm are considered acceptable if the latest measured rate has not exceeded the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.

3. Leakage rates greater than 1.0 gpm but less than or equal to 5.0 gpm are considered unacceptable if the latest measured rate exceeded the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.

4. Leakage rates greater than 5.0 gpm are considered unacceptable.

(b) Minimum differential test pressure shall not be less than 150 psid.

REACTOR COOLANT SYSTEM

PRIMARY TO SECONDARY LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.6.3 Primary to secondary leakage shall be limited to:

a. Total leakage from all steam generators of 300 gpd,

b. Leakage from an individual steam generator of 100 gpd,

c. Total leakage increase of 60 gpd between surveillance intervals, and

d. An increasing trend based on the latest surveillance that indicates 100 gpd would not be exceeded on an individual steam generator within 90 minutes.

APPLICABILITY: MODE 1 above 50% power.*

ACTION:

a. If the total leakage limit from all steam generators or the leakage limit from any individual steam generator is exceeded, be in HOT STANDBY within the next 6 hours and cold shutdown within the following 30 hours.

b. If the increase in total leakage from all steam generators exceeds 60 gpd between surveillance intervals, reduce power below 50% rated thermal power within 90 minutes.

c. If an increasing trend indicates that the limit of 100 gpd per steam generator is going to be exceeded within 90 minutes, reduce power to below 50% rated thermal power within 90 minutes, be in HOT STANDBY within the next 6 hours and cold shutdown within the following 30 hours.

*Once the limiting condition for operation has been exceeded, the corresponding action must be followed to completion.

SURVEILLANCE REQUIREMENTS

4.4.6.3 Primary to secondary leakage shall be demonstrated to be within each of the above limits by:

a. Primary to secondary leakage will be recorded and trended at least once during each 4 hour interval (e.g., 00:00-04:00, 04:00-08:00, 08:00-12:00, 12:00-16:00, 16:00-20:00, 20:00-24:00) from each OPERABLE N-16 continuous readout and alarm radiation monitoring system and the condenser air ejector exhaust continuous readout and alarm radiation monitor.

CTS 3.4.6.3

R.1

~~REACTOR COOLANT SYSTEM~~

~~SURVEILLANCE REQUIREMENTS~~

~~b. Primary to secondary leakage will be determined from a condenser air ejector grab sample at least every 24 hours.~~

~~c. Primary to secondary leakage will be determined from steam generator and reactor coolant liquid samples at least every 72 hours.~~

~~d. If the above surveillance operations cannot be performed as specified, the limiting conditions for operation and associated action statements of Specification 3.4.6.4 shall apply.~~

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CTS 3.4.6.4

R.1

12-12-88

REACTOR COOLANT SYSTEM

PRIMARY TO SECONDARY LEAKAGE DETECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.6.4 The following primary to secondary leakage detection systems shall be OPERABLE:

a. One of the two N-16 radiation monitoring systems (either the N-16 continuous readout and alarm radiation monitors on each steam line, or the N-16 continuous readout and alarm radiation monitor on the main steam header),

b. The condenser air ejector exhaust continuous readout and alarm radiation monitor,

c. The capability to obtain and analyze a condenser air ejector exhaust grab sample, and

d. The capability to obtain and analyze a liquid sample from each steam generator and from the RCS.

APPLICABILITY: MODE 1 above 50% power.

ACTION:

a. If both the N-16 radiation monitoring system on each steam line and the N-16 radiation monitoring system on the main steam header are INOPERABLE, increase the frequency of the condenser air ejector grab sample required by Specification 4.4.6.3b to at least once during each 4 hour interval (e.g., 00:00-04:00, 04:00-08:00, 08:00-12:00, 12:00-16:00, 16:00-20:00, 20:00-24:00) and return at least one of the systems to operation within seven days or reduce power to less than 50% within the next four hours.

b. If the condenser air ejector exhaust continuous readout and alarm radiation monitor is INOPERABLE, provided at least one of the N-16 monitoring systems is OPERABLE, increase the frequency of the condenser air ejector grab sample required by Specification 4.4.6.3b to at least once during each 4 hour interval (e.g., 00:00-04:00, 04:00-08:00, 08:00-12:00, 12:00-16:00, 16:00-20:00, 20:00-24:00) and return the system to operation within seven days or reduce power to less than 50% within the next four hours.

c. If the capability to obtain and analyze a condenser air ejector grab sample is lost, provided at least one of the N-16 monitoring systems is OPERABLE and the condenser air ejector exhaust continuous readout and alarm radiation monitor is OPERABLE, restore the capability within seven days or reduce power to less than 50% within four hours.

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CTS 3.4.6.4

R.1

REACTOR COOLANT SYSTEM

LIMITING CONDITION FOR OPERATION

d. If both N-16 monitoring systems are INOPERABLE and either the condenser air ejector exhaust continuous readout and alarm radiation monitor is INOPERABLE or the capability to obtain and analyze a condenser air ejector exhaust grab sample is lost, reduce power to less than 50% within the next 90 minutes.

e. If the condenser air ejector exhaust continuous readout and alarm radiation monitor is INOPERABLE and the capability to obtain and analyze a condenser air ejector exhaust grab sample is lost, reduce power to less than 50% within the next 90 minutes.

f. If the capability to obtain and analyze a liquid sample from each steam generator and the RCS is lost, increase the frequency of performance of the RCS water inventory balance in T.S. 4.4.6.2.1d to once every 24 hours.

SURVEILLANCE REQUIREMENTS

4.4.6.4 The N-16 monitors and air ejector exhaust radiation monitoring instrumentation channels shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST during the MODES and at the frequencies shown in Tables 4.4-2a and 4.3-14, respectively.

Rev. 0

TABLE 4.4-2a

PRIMARY TO SECONDARY LEAKAGE DETECTION SYSTEMS SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. N-16 Radiation Monitors				
a. MS Header	S	R	M	1 (>50% Power)
b. MS Lines	S	R	M	1 (>50% Power)

12-12-88

R.1

CTS 3.4.6.4

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REACTOR COOLANT SYSTEM

3/4.4.7 CHEMISTRY

LIMITING CONDITION FOR OPERATION

3.4.7 The Reactor Coolant System chemistry shall be maintained within the limits specified in Table 3.4-1.

APPLICABILITY: At all times.

ACTION:

MODES 1, 2, 3 and 4

a. With any one or more chemistry parameters in excess of the Steady State Limit but within the Transient Limit, restore the Parameter to within its Steady State Limit within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With any one or more chemistry parameters in excess of the Transient Limit, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

At all other times

With the concentration of either chloride or fluoride in the Reactor Coolant System in excess of its Steady State Limit for more than 24 hours or in excess of its Transient Limit, reduce the pressurizer pressure to ≤ 500 psig, if applicable, and perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the Reactor Coolant System; determine that the Reactor Coolant System remains acceptable for continued operation prior to increasing the pressurizer pressure above 500 psig or prior to proceeding to MODE 4.

SURVEILLANCE REQUIREMENTS

4.4.7 The Reactor Coolant System chemistry shall be determined to be within the limits by analysis of those parameters at the frequencies specified in Table 4.4-3.

R.1

11-26-77

TABLE 3.4-1

REACTOR COOLANT SYSTEM

CHEMISTRY LIMITS

PARAMETER	STEADY STATE LIMIT	TRANSIENT LIMIT
DISSOLVED OXYGEN*	≤ 0.10 ppm	≤ 1.00 ppm
CHLORIDE	≤ 0.15 ppm	≤ 1.50 ppm
FLUORIDE	≤ 0.15 ppm	≤ 1.50 ppm

*Limit not applicable with $T_{avg} \leq 250°F$.

R.1

TABLE 4.4-3

REACTOR COOLANT SYSTEM

CHEMISTRY LIMITS SURVEILLANCE REQUIREMENTS

PARAMETER	MINIMUM ANALYSIS FREQUENCIES
DISSOLVED OXYGEN*	At least once per 72 hours
CHLORIDE**	At least once per 72 hours
FLUORIDE**	At least once per 72 hours

* Not required with $T_{avg} \leq 250°F$

** Not required when the Reactor Coolant System is drained below the reactor pressure vessel nozzle and the internals and/or head are in place.

A.1

ITS 3.4.16

3-11-88

REACTOR COOLANT SYSTEM

3/4.4.8 SPECIFIC ACTIVITY

ITS

LIMITING CONDITION FOR OPERATION

3.4.16

3.4.8 The specific activity of the primary coolant shall be within limit~~ed to:~~ A.1

SR 3.4.16.2

a. $\leq$ 1.0 µCi/gram DOSE EQUIVALENT I-131, and (See ITS SR 3.4.16.2)

SR 3.4.16.1

b. $\leq$ 100/Ē µCi/gram. (See ITS SR 3.4.16.1)

Appl.

APPLICABILITY: MODES 1, 2, 3*, ~~4 and 5.~~ L.1

ACTION: MODES 1, 2 and 3*

Action A.1
Action A.2
Action C

a. With the specific activity of the primary coolant > 1.0 µCi/gram DOSE EQUIVALENT I-131 for more than 48 hours during one continuous time interval or exceeding the limit line shown on Figure 3.4-1, be in at least HOT STANDBY with T_{avg} < 500°F within 6 hours.

b. With the specific activity of the primary coolant > 100/Ē µCi/gram, be in at least HOT STANDBY with T_{avg} < 500°F within 6 hours.

~~MODES 1, 2, 3, 4 and 5~~ L.1

Action A.1

a. With the specific activity of the primary coolant > 1.0 µCi/gram DOSE EQUIVALENT I-131 ~~or > 100/Ē µCi/gram~~, perform the sampling and analysis requirements of item 4a of Table 4.4-4 until the specific activity of the primary coolant is restored to within its limits. L.4

RA. A.1 Note

Insert proposed Required Action A Note L.2

*With T_{avg} greater than or equal to 500°F.

(A.1)

ITS 3.4.16

3-11-88

REACTOR COOLANT SYSTEM

ITS

LIMITING CONDITION FOR OPERATION

SURVEILLANCE REQUIREMENTS

SR 3.4.16.1
SR 3.4.16.2
SR 3.4.16.3

4.4.8 The specific activity of the primary coolant shall be determined to be within the limits by performance of the sampling and analysis program of Table 4.4-4.

ITS

SR 3.4.16.1

SR 3.4.16.2

SR 3.4.16.3

Action A.1

Action B.1

SR 3.4.16.2

Action 3.4.16.A

SR 3.4.16.3 Note

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TABLE 4.4-4

PRIMARY COOLANT SPECIFIC ACTIVITY SAMPLE AND ANALYSIS PROGRAM

TYPE OF MEASUREMENT AND ANALYSIS	SAMPLE AND ANALYSIS FREQUENCY	MODES IN WHICH SAMPLE ANALYSIS REQUIRED
1. Gross Activity Determination	At least once per ~~72 hours~~ 7 days	1, 2, 3(#), ~~4~~ L.1 L.3
2. Isotopic Analysis for DOSE EQUIVALENT I-131 Concentration	1 per 14 days	1
3. Radiochemical for $\bar{E}$ Determination	1 per 6 months*	1
4. Isotopic Analysis for Iodine Including I-131, I-133, and I-135	a) Once per 4 hours, whenever the specific activity exceeds 1.0 µCi/gram DOSE EQUIVALENT I-131 ~~or 100/Ē µCi/gram~~, and	1#, 2#, 3#, ~~4#, 5#~~ L.1 A.1 L.4
	b) One sample between 2 & 6 hours following a THERMAL POWER change exceeding 15 percent of the RATED THERMAL POWER within a one hour period.	1, 2, 3

#Until the specific activity of the primary coolant system is restored within its limits.

*Sample to be taken within 31 days ~~after a minimum of 2 EFPD and 20 days of POWER OPERATION have elapsed since the reactor was last subcritical for 48 hours or longer.~~ Insert proposed SR 3.4.16.3 Note L.5

11-26-77

ITS 3.4.16

A.1

ITS 3.14.16

11-26-77

ITS

Figure 3.4.16-1

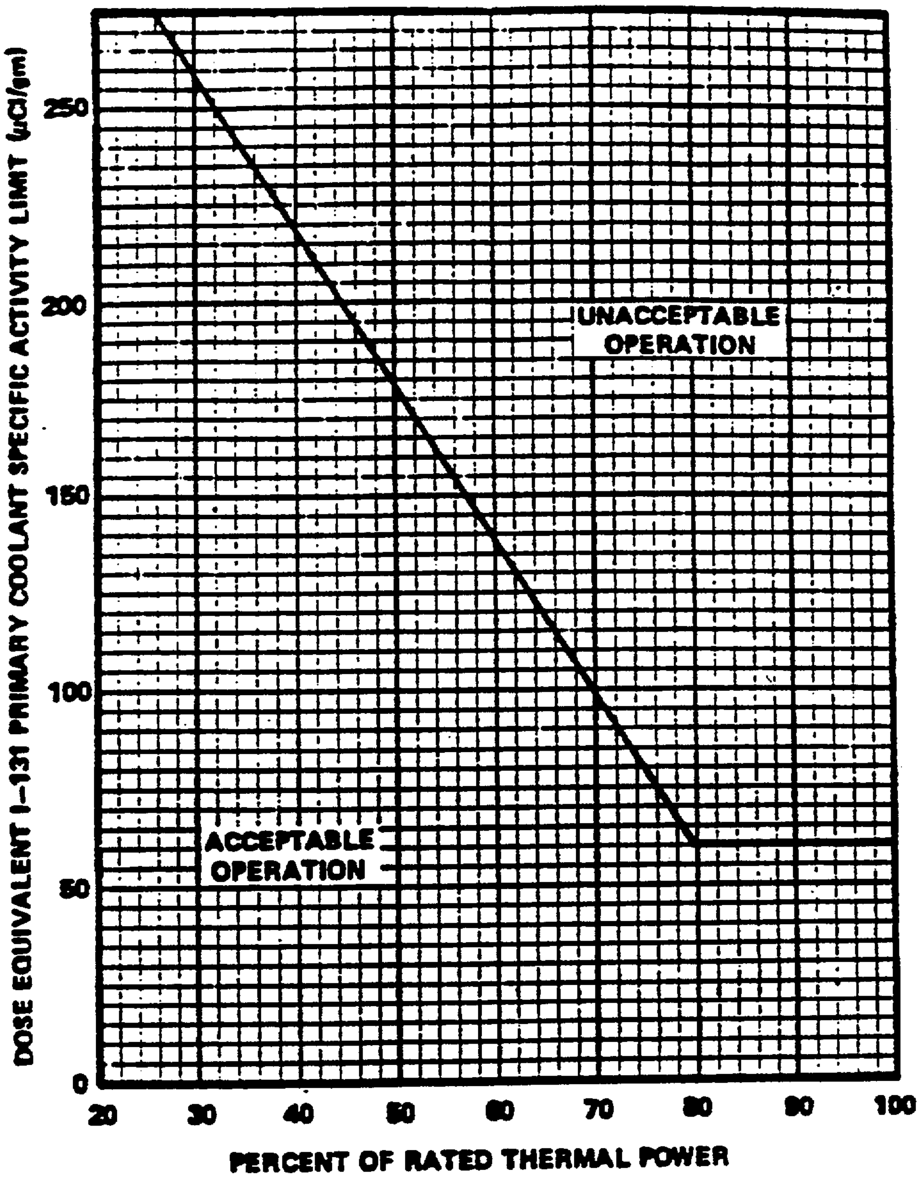


FIGURE 3.4-1

DOSE EQUIVALENT I–131 Primary Coolant Specific Activity Limit Versus Percent of RATED THERMAL POWER with the Primary Coolant Specific Activity >1.0 µCi/gram Dose Equivalent I-131

ITS

A.1

REACTOR COOLANT SYSTEM

3/4.4.9 PRESSURE/TEMPERATURE LIMITS

REACTOR COOLANT SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.4.3

3.4.9.1 The Reactor Coolant System ~~(except the pressurizer)~~ temperature and pressure shall be limited in accordance with the limit lines shown in Figures 3.4-2 and 3.4-3 ~~during heatup, cooldown, and inservice leak and hydrostatic testing~~ with: LA.1 A.2

a. A maximum heatup of 60°F in any one hour period.

b. A maximum cooldown of 100°F in any one hour period.

c. A maximum temperature change of less than or equal to 10°F in any one hour period during inservice hydrostatic and leak testing operations above the heatup and cooldown limit curves. A.4

Appl.

APPLICABILITY: At all times. in MODES 1, 2, 3, or 4 Insert proposed Condition A Note A.3

ACTION:

Action A

With any of the above limits exceeded, restore the temperature and/or pressure to within the limit within 30 minutes; ~~perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the Reactor Coolant System;~~ determine that the Reactor Coolant System remains acceptable for continued operations or be in at least HOT STANDBY within the next 6 hours and reduce the RCS Tavg and pressure to less than 200°F and 500 psig, respectively, within the following 30 hours. LA.2

Action B

Within 72 hours

Action C

Insert proposed Condition C Note A.3

Insert proposed Condition C M.1

M.2

SURVEILLANCE REQUIREMENTS

SR 3.4.3.1

4.4.9.1.1 The Reactor Coolant System temperature and pressure shall be determined to be within the limits at least once per 30 minutes during system heatup, cooldown and inservice leak and hydrostatic testing operations.

~~4.4.9.1.2 The reactor vessel material irradiation surveillance specimens shall be removed and examined, to determine changes in material properties, at the intervals required by 10 CFR 50, Appendix H. The results of these examinations shall be used to update Figures 3.4-2 and 3.4-3.~~ A.5

ITS

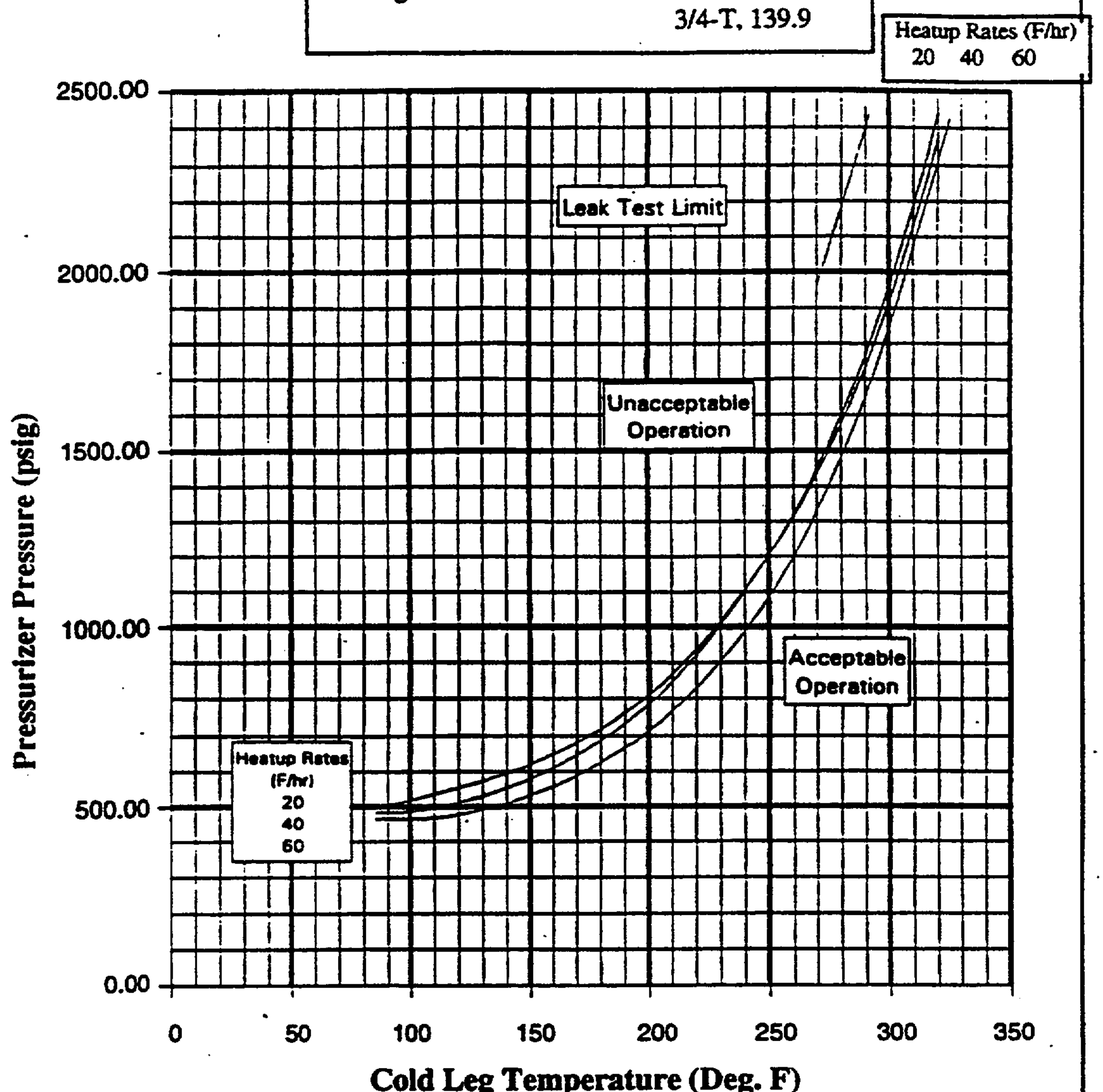
Figure 3.4.3-1

(A.1)

ITS 3.4.3

Figure 3.4-2 — **North Anna Unit 1**
Reactor Coolant System Heatup Limitations

Material Property Basis
Limiting Material: Circumferential Weld Seam
Limiting ART at 30.7 EFPY: 1/4-T, 162.9 F
3/4-T, 139.9



North Anna Unit 1 Reactor Coolant System Heatup Limitations (Heatup Rates up to 60 F/hr) Applicable for the First 30.7 EFPY (Without Margins for Instrumentation Errors)

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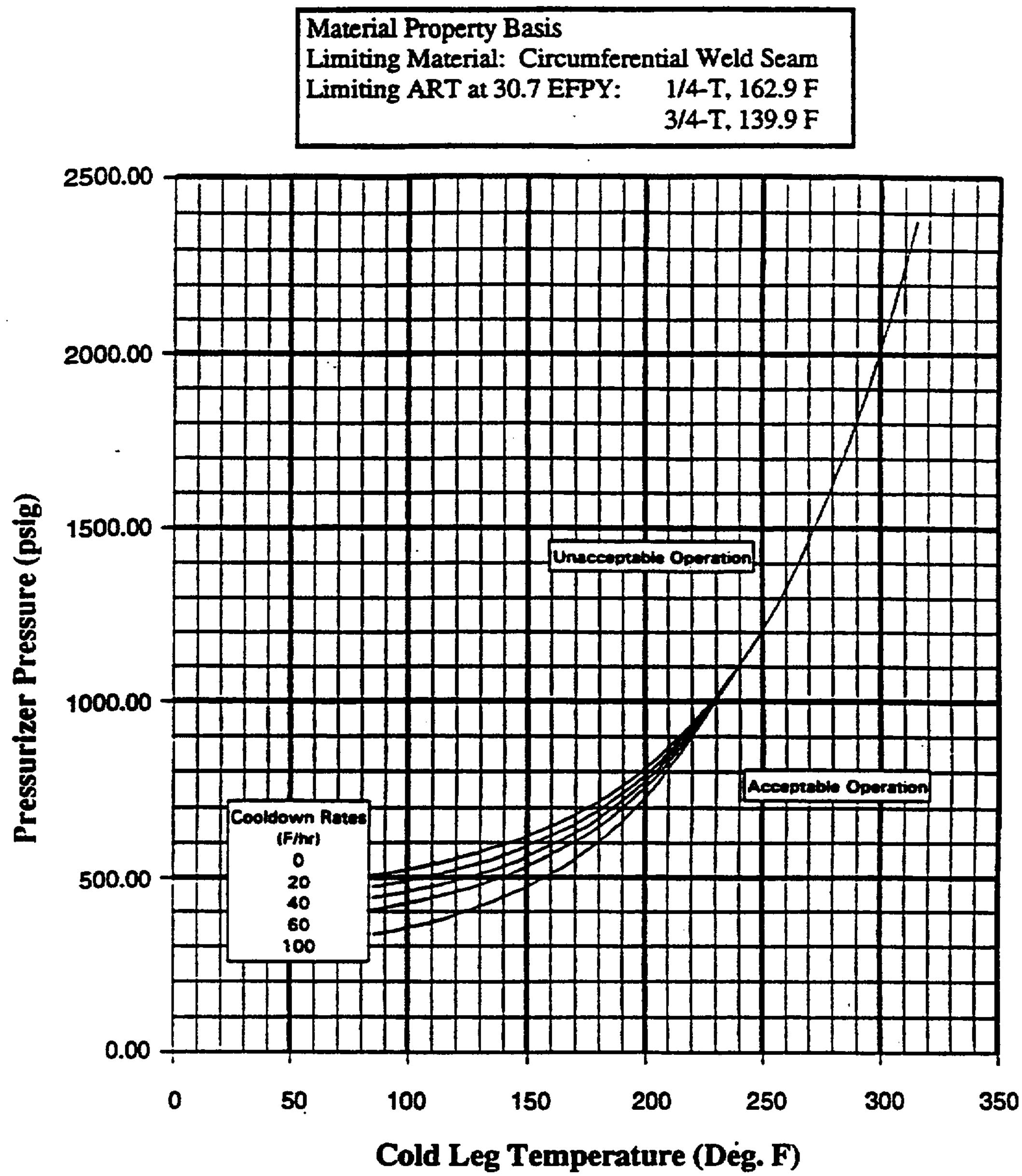
ITS

Figure 3.4.3-2

10-05-94

A.1

Figure 3.4-3 — **North Anna Unit 1**
Reactor Coolant System Cooldown Limitations



North Anna Unit 1 Reactor Coolant System Cooldown Limitations (Cooldown Rates up to 100 F/hr) Applicable for the First 30.7 EFPY (Without Margins for Instrumentation Errors)

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CTS 3.4.9.2

11-26-77

REACTOR COOLANT SYSTEM

PRESSURIZER

LIMITING CONDITION FOR OPERATION

3.4.9.2 The pressurizer temperature shall be limited to:

a. A maximum heatup of 100°F or cooldown of 200°F in any one hour period, and

b. A maximum spray water temperature and pressurizer temperature differential of 320°F.

APPLICABILITY: At all times.

ACTION:

With the pressurizer temperature limits in excess of any of the above limits restore the temperature to within the limits within 30 minutes; perform an engineering evaluation to determine the effects of the out-of-limit condition on the fracture toughness properties of the pressurizer; determine that the pressurizer remains acceptable for continued operation or be in at least HOT STANDBY within the next 6 hours and reduce the pressurizer pressure to less than 500 psig within the following 30 hours.

R.1

SURVEILLANCE REQUIREMENTS

4.4.9.2 The pressurizer temperatures shall be determined to be within the limits at least once per 30 minutes during system heatup or cooldown. The spray water temperature differential shall be determined to be within the limit at least once per 12 hours during auxiliary spray operation.

A.1

10-05-94

M.4

Add proposed LCO Note

ITS

REACTOR COOLANT SYSTEM

LOW-TEMPERATURE OVERPRESSURE PROTECTION

LIMITING CONDITION FOR OPERATION

LCO 3.4.12

3.4.9.3 Two power-operated relief valves (PORVs) shall be OPERABLE with lift settings of (1) less than or equal to 500 psig whenever any RCS cold leg temperature is less than or equal to 235°F, and (2) less than or equal to 395 psig whenever any RCS cold leg temperature is less than 150°F. and the accumulators isolated with power removed from the isolation valve operator. M.4

Applicability

LCO 3.4.12.b

APPLICABILITY: MODE 4 when the temperature of any RCS cold leg is less than or equal to 235°F, MODE 5, and MODE 6 when the head is on the reactor vessel and the RCS is not vented through a 2.07 square inch or larger vent.

ACTION:

Action E
Action G

a. With one PORV inoperable in MODE 4, restore the inoperable PORV to OPERABLE status within 7 days or depressurize and vent the RCS through at least a 2.07 square inch vent within the next 8 hours.

Action F
Action G

b. With one PORV inoperable in MODES 5 or 6, either (1) restore the inoperable PORV to OPERABLE status within 24 hours, or (2) complete depressurization and venting of the RCS through at least a 2.07 square inch vent within a total of 32 hours.

Action G

c. With both PORVs inoperable, complete depressurization and venting of the RCS through at least a 2.07 square inch vent within ~~8~~ 12 hours. L.1

SR 3.4.12.4

d. With the RCS vented per ACTIONS a, b, or c, verify the vent pathway at least once per 31 days when the pathway is provided by a valve(s) that is locked, ~~sealed, or otherwise secured in the open position~~; otherwise, verify the vent pathway ever 12 hours. LA.1

e. ~~In the event either the PORVs 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 6.9.2 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the PORVs or RCS vent(s) on the transient, and any corrective action necessary to prevent recurrence.~~ L.2

~~f. The provisions of Specification 3.0.4 are not applicable.~~ M.1

Action A — Add proposed Action A

Action B — Add proposed Action B

M.2

Action C — Add proposed Action C

Action D — Add proposed Action D

M.4

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ITS 3.4.12

A.1

03-02-99

ITS

SURVEILLANCE REQUIREMENTS

Add proposed SR 3.4.12.7 Note

M.1

4.4.9.3 Each PORV shall be demonstrated OPERABLE by:

SR 3.4.12.7

a. Performance of a CHANNEL FUNCTIONAL TEST on the PORV actuation channel, but excluding valve operation, within 31 days prior to entering a condition in which the PORV is required OPERABLE and at least once per 31 days thereafter when the PORV is required OPERABLE.

SR 3.4.12.8

b. Performance of a CHANNEL CALIBRATION on the PORV actuation channel, at least once per 18 months.

SR 3.4.12.5 3.4.12.4

c. Verifying the PORV keyswitch is in the Auto position and the PORV isolation valve is open at least once per 72 hours when the PORV is being used for overpressure protection.

SR 3.4.12.6

d. At least once per 7 days by verifying that the pressure in the PORV nitrogen accumulators is greater than the surveillance limit.

e. ~~Testing pursuant to Specification 4.0.5.~~

A.2

Add proposed SR 3.4.12.3

M.4

SR 3.4.12.3

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CTS 3.4.10.1

12-28-79

R.1

REACTOR COOLANT SYSTEM

3/4.4.10 STRUCTURAL INTEGRITY

ASME CODE CLASS 1, 2 & 3 COMPONENTS

LIMITING CONDITION FOR OPERATION

3.4.10.1 The structural integrity of ASME Code Class 1, 2 and 3 components shall be maintained in accordance with Specification 4.4.10.1.

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.

d. With any RCP shaft deflection indication greater than 20 mils, the reactor shall be placed in at least HOT STANDBY within 1 hour, the affected RCP(s) tripped and then affected flow straightener plate(s) ultrasonically examined.

e. The provisions of Specification 3.0.4 are not applicable.

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ITS

(A,1)

ITS 5.0

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS

5.5.6 4.4.10.1.1 In addition to the requirements of Specification 4.0.5, the Reactor Coolant pump flywheels shall be inspected once every 10 years by a qualified inplace UT examination over the volume from the inner bore of the flywheel to the circle of one-half the outer radius or a surface examination (MT and/or PT) of exposed surfaces defined by the volume of disassembled flywheels. A.22

5.5.7 ~~4.4.10.1.2 In addition to the requirements of Specification 4.0.5, at least one third of the main member to main member welds, joining A572 material, in the steam generator supports, shall be visually examined during each 40 month inspection interval.~~ LA.11

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REACTOR COOLANT SYSTEM

3/4.4.11 REACTOR VESSEL HEAD VENT

LIMITING CONDITION FOR OPERATION

3.4.11.1 At least two Reactor Vessel Head Vent (RVHV) paths consisting of two isolation valves powered from emergency buses shall be OPERABLE and closed.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With one of the above RVHV 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 both isolation valves in the inoperable vent path.

b. With two RVHV paths inoperable, maintain the inoperable vent paths closed with power removed from the valve actuators of all the isolation valves in the inoperable vent paths, and restore at least one of the vent paths to OPERABLE status within 30 days or be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. If any RVHV isolation valve cannot be verified to be closed within 72 hours, be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.11.1 Each RVHV path isolation valve not required to be closed above shall be demonstrated OPERABLE by:

a. Exercising each remotely controlled valve through one cycle from the control room pursuant to Specification 4.0.5.

4.4.11.2 Each RVHV path shall be demonstrated OPERABLE following each refueling by:

a. Verifying that the upstream manual isolation valve is locked in the opened position.

b. Verifying flow through the RVHV paths during system venting.

A.1

ITS

3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

ACCUMULATORS

LIMITING CONDITION FOR OPERATION

LCO 3.5.1

3.5.1 ~~Each~~ Three reactor coolant system accumulator shall be OPERABLE ~~with:~~ A.1

SR 3.5.1.1 a. ~~The isolation valve open,~~

SR 3.5.1.2 b. ~~A contained borated water volume of between 7580 and 7756 gallons~~ A.2

SR 3.5.1.4 c. ~~Between 2200 and 2400 ppm of boron, and~~

SR 3.5.1.3 d. ~~A nitrogen cover-pressure of between 599 and 667 psig.~~

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

ACTION: Add proposed Action A — Reduce RCS pressure to ≤ 1000 psig

Action A

Condition A A.1

Action B

Action C.2

a. With one accumulator inoperable, except as a result of ~~a closed isolation valve,~~ restore the inoperable accumulator to OPERABLE status within one hour or ~~be in HOT SHUTDOWN~~ within the next 12 hours. L.3 A.6 M.1

Add proposed Action C.1

Action C.1

b. ~~With one accumulator inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in HOT STANDBY within one hour and be in HOT SHUTDOWN within the next 12 hours.~~ L.3 A.6

Action D

Add proposed Action D A.3

SURVEILLANCE REQUIREMENTS

4.5.1 Each accumulator shall be demonstrated OPERABLE:

a. At least once per 12 hours by:

SR 3.5.1.2
SR 3.5.1.3

1. Verifying the contained borated water volume is ≥ 7580 gallons and ≤ 7756 gallons and nitrogen cover-pressure in the tanks~~,~~ and is ≥ 599 psig and ≤ 667 psig A.2

SR 3.5.1.1

2. Verifying that each accumulator isolation valve is fully open. A.1

*~~Pressurizer~~ RCS Pressure above 1000 psig. ~~Power lock out of valves is not permitted in MODE 3 when below 1000 psig.~~ L.1

A.5

A.1

ITS

EMERGENCY CORE COOLING SYSTEMS

that is not the result of addition from the refueling water storage tank L.4

SURVEILLANCE REQUIREMENTS (Continued)

A.1

SR 3.5.1.4 b. At least once per 31 days and within 6 hours after each solution volume increase of ≥ ~~1~~ 50 % of ~~tank volume~~ indicated level by verifying the boron concentration of the affected accumulator solution. is ≥ 2200 ppm and ≤ 2400 ppm A.2

SR 3.5.1.5 c. At least once per 31 days when the RCS pressure is above 2000 psig by verifying that the ~~breaker supplying~~ power to the isolation valve operator is ~~locked in the off position~~ removed. L.6

~~d. At least once per 18 months by verifying that each accumulator isolation valve opens automatically under each of the following conditions:~~

~~1. When the RCS pressure exceeds 2010 psig,~~

~~2. Upon receipt of a safety injection test signal.~~ L.5

A.4

A.1

07-24-96

ITS

EMERGENCY CORE COOLING SYSTEMS

ECCS SUBSYSTEMS – Tavg GREATER THAN OR EQUAL TO 350°F

LIMITING CONDITION FOR OPERATION

LCO 3.5.2

3.5.2 Two ~~independent~~ ECCS subsystems shall be OPERABLE ~~with each subsystem comprised of:~~

~~a. One OPERABLE charging pump,~~

~~b. One OPERABLE low head safety injection pump,~~

~~c. An OPERABLE flow path capable of transferring fluid to the Reactor Coolant System when taking suction from the refueling water storage tank on a safety injection signal or from the containment sump when suction is transferred during the recirculation phase of operation~~ ~~or from the discharge of the outside recirculation spray pump.~~

LA.1

M.4

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

or more

L.2

Action A

Action B

a. With one or more ECCS subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 72 hours or be in MODE 3 in 6 hours and HOT SHUTDOWN within the next 12 hours.

M.1

~~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 6.9.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date.~~

L.3

~~c. The provisions of Specification 3.0.4 are not applicable to 3.5.2.a and 3.5.2.b for one hour following heatup above 235°F or prior to cooldown below 235°F.~~

M.2

Action C

Insert Proposed Action C

L.2

A.1

ITS

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS

4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE:

SR 3.5.2.1 a. At least once per 12 hours by verifying that the following valves are in the indicated positions with power to the valve operators removed: A.1

(Unit 1) Valve Number	Valve Function	Valve Position
a. MOV-1890A	a. LHSI to hot leg	a. closed
b. MOV-1890B	b. LHSI to hot leg	b. closed
c. MOV-1836	c. Ch pump to cold leg	c. closed
d. MOV-1869A	d. Ch pump to hot leg	d. closed
e. MOV-1869B	e. Ch pump to hot leg	e. closed

SR 3.5.2.2 SR 3.5.2.3 b. 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. Add SR 3.5.2.3 M.3

~~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 suctions during LOCA conditions. This visual inspection shall be performed:~~

~~1. For all accessible areas of the containment prior to establishing CONTAINMENT INTEGRITY, and~~

~~2. Of the areas affected within containment at the completion of each containment entry when CONTAINMENT INTEGRITY is established.~~ LA.4

d. At least once per 18 months by:

SR 3.5.2.8 1. 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. L.5

e. At least once per 18 months ~~during shutdown~~, by: LA.5

SR 3.5.2.5 1. Verifying that each automatic valve in the flow path that is not locked, sealed, or otherwise secured in position actuates to its correct position on an actual or simulated ~~a safety injection~~ actuation ~~test~~ signal. L.6 LA.6 L.1

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A.1

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ITS

EMERGENCY CORE COOLING SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

actuation

LA.6

SR 3.5.2.6

ECCS

A.1

2. Verifying that each ~~of the following~~ pump starts automatically upon receipt of a ~~safety injection test~~ signal: an actual or simulated

L.1

~~a. Charging pump, and~~

~~b. Low head safety injection pump.~~

LA.1

SR 3.5.2.4

ECCS

f. By verifying that each ~~of the following~~ pumps ~~develop the indicated discharge pressure (after subtracting suction pressure) on recirculation flow~~ when tested pursuant to ~~Specification 4.0.5.~~ developed head at the test flow point is greater than or equal to the required developed head

the Inservice Testing Program

LA.3

LA.3

~~1. Charging pump greater than or equal to 2410 psig.~~

~~2. Low head safety injection pump greater than or equal to 156 psig.~~

SR 3.5.2.7

g. By verifying that the following manual valves ~~requiring adjustment to prevent pump "runout" and subsequent component damage~~ are ~~locked and tagged~~ secured in the proper position ~~for injection:~~

LA.2

L.7

~~1. Within 4 hours following completion of any repositioning or maintenance on the valve when the ECCS subsystems are required to be OPERABLE.~~

L.4

2. At least once per 18 months.

1. 1-SI-188 Loop A Cold Leg
2. 1-SI-191 Loop B Cold Leg
3. 1-SI-193 Loop C Cold Leg
4. 1-SI-203 Loop A Hot Leg
5. 1-SI-204 Loop B Hot Leg
6. 1-SI-205 Loop C Hot Leg

~~h. By performing a flow balance test, during shutdown, following completion of modifications to the ECCS subsystems that alter the subsystem flow characteristics and verifying that:~~

~~1. For high head safety injection lines, with a single pump running:~~

~~a. The sum of the injection line flow rates, excluding the highest flow rate, is greater than or equal to the minimum flow rate required to demonstrate compliance with 10 CFR 50.46, and~~

~~b. The total pump flow rate is less than or equal to the evaluated pump runout limit.~~

L.4

ITS 3.4.12

A.1

07-24-96

ITS

EMERGENCY CORE COOLING SYSTEMS

ECCS SUBSYSTEMS – Tavg LESS THAN 350°F

LIMITING CONDITION FOR OPERATION

3.5.3 As a minimum, one ECCS subsystem comprised of the following shall be OPERABLE:

a. One OPERABLE charging pump#,

b. One OPERABLE low head safety injection pump#, and

c. An OPERABLE flow path capable of automatically transferring fluid to the reactor coolant system when taking suction from the refueling water storage tank or from the containment sump when the suction is transferred during the recirculation phase of operation or from the discharge of the outside recirculation spray pump.

APPLICABILITY: MODE 4.

ACTION:

a. With no ECCS subsystem OPERABLE because of the inoperability of either the charging pump or the flow path from the refueling water storage tank, restore at least one ECCS subsystem to OPERABLE status within 1 hour or be in COLD SHUTDOWN within the next 20 hours.

b. With no ECCS subsystem OPERABLE because of the inoperability of the low head safety injection pump, restore at least one ECCS subsystem to OPERABLE status or maintain the Reactor Coolant System T_{avg} less than 350°F by use of alternate heat removal methods.

c. 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 6.9.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date.

See ITS 3.5.3

LCO 3.4.12
Appl 3.4.12
LCO Note

A maximum of one charging pump and one low head safety injection pump shall be OPERABLE and capable of injecting into the RCS whenever the temperature of one or more of the RCS cold legs is less than or equal to 235°F, except two charging pumps may be OPERABLE and capable of injecting into the RCS during pump switching operations. for ≤ 1 hour

Moved to ITS 3.4.12 Note

M.3

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(A.1)

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ITS

EMERGENCY CORE COOLING SYSTEMS

ECCS SUBSYSTEMS – Tavg LESS THAN 350°F

LIMITING CONDITION FOR OPERATION

3.5.3

3.5.3 As a minimum, one ECCS subsystem comprised of the following shall be OPERABLE: (LA.1)

a. One OPERABLE charging pump#,

b. One OPERABLE low head safety injection pump#, and

c. An OPERABLE flow path capable of automatically transferring fluid to the reactor coolant system when taking suction from the refueling water storage tank or from the containment sump when the suction is transferred during the recirculation phase of operation or from the discharge of the outside recirculation spray pump. (LA.1)

APPLICABILITY: MODE 4.

ACTION:

Action A

Action B

a. With no ECCS subsystem OPERABLE because of the inoperability of either the charging pump or the flow path from the refueling water storage tank, restore at least one ECCS subsystem to OPERABLE status within 1 hour or be in COLD SHUTDOWN within the next ~~20~~ 24 hours. (M.1) (L.2)

b. With no ECCS subsystem OPERABLE because of the inoperability of the low head safety injection pump, restore at least one ECCS subsystem to OPERABLE status or maintain the Reactor Coolant System T_{avg} less than 350°F by use of alternate heat removal methods. (M.1)

c. 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 6.9.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date. (L.1)

\# A maximum of one charging pump and one low head safety injection pump shall be OPERABLE and capable of injecting into the RCS whenever the temperature of one or more of the RCS cold legs is less than or equal to 235°F except two charging pumps may be OPERABLE and capable of injecting into the RCS during pump switching operations.

See ITS 3.4.12

A.1

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ITS

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS

4.5.3.1 The ECCS subsystem shall be demonstrated OPERABLE per the applicable Surveillance Requirements of 4.5.2. See ITS 3.5.3

SR 3.4.12.1 SR 3.4.12.2 4.5.3.2 At least once per 12 hours, verify that a maximum of one charging pump and one low head safety injection pump is OPERABLE and capable of injecting into the RCS whenever the temperature of one or more of the RCS cold legs is less than or equal to 235°F.*

LCO Note * Two charging pumps may be OPERABLE and capable of injecting into the RCS during pump switching operations. for ≤ 1 hour

M.3

ITS 3.5.3

A.1

ITS

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS

SR 3.5.3.1 4.5.3.1 The ECCS subsystem shall be demonstrated OPERABLE per ~~the applicable Surveillance Requirements of 4.5.2.~~ A.2

SR 3.5.2.1
SR 3.5.2.3
SR 3.5.2.4
SR 3.5.2.7
SR 3.5.2.8

4.5.3.2 At least once per 12 hours, verify that a maximum of one charging pump and one low head safety injection pump is OPERABLE and capable of injecting into the RCS whenever the temperature of one or more of the RCS cold legs is less than or equal to 235°F.* See ITS 3.4.12

* Two charging pumps may be OPERABLE and capable of injecting into the RCS during pump switching operations. See ITS 3.4.12

ITS

EMERGENCY CORE COOLING SYSTEMS

3/4.5.4 BORON INJECTION SYSTEM

A.1

BORON INJECTION TANK

LIMITING CONDITION FOR OPERATION

LCO 3.5.6

3.5.4.1 The boron injection tank shall be OPERABLE ~~with:~~ A.1

SR 3.5.6.2 a. ~~A contained borated water volume of at least 900 gallons,~~ A.2

SR 3.5.6.3 b. ~~Between 12,950 and 15,750 ppm of boron, and~~

SR 3.5.6.1 c. ~~A minimum solution temperature of 115°F.~~

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

Action A, Action B, Action C

With the boron injection tank inoperable, restore the tank to OPERABLE status within 1 hour or be in HOT STANDBY and borated to a SHUTDOWN MARGIN ~~equivalent to 1.77% Δk/k at 200°F~~ within the limit provided in the COLR within the next 6 hours; restore the tank to OPERABLE status within the next 7 days or be in HOT SHUTDOWN within the next 12 hours. LA.1

SURVEILLANCE REQUIREMENTS

4.5.4.1 The boron injection tank shall be demonstrated OPERABLE by:

SR 3.5.6.2 a. Verifying the contained borated water volume is ≥ 900 gallons at least once per 7 days, A.2

SR 3.5.6.3 b. Verifying the boron concentration of the water in the tank is ≥ 12,950 ppm and ≤ 15,750 ppm at least once per 7 days, and

SR 3.5.6.1 c. Verifying the water temperature is ≥ 115°F at least once per 24 hours.

EMERGENCY CORE COOLING SYSTEMS

HEAT TRACING

LIMITING CONDITION FOR OPERATION

3.5.4.2 At least two independent channels of heat tracing shall be OPERABLE for the boron injection tank and for the heat traced portions of the associated flow paths.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

With only one channel of heat tracing on either the boron injection tank or on the heat traced portion of an associated flow path OPERABLE, operation may continue for up to 30 days provided the tank and flow path temperatures are verified to be $\geq$ 115°F at least once per 8 hours; otherwise, be in HOT SHUTDOWN within 12 hours.

R.1

SURVEILLANCE REQUIREMENTS

4.5.4.2 Each heat tracing channel for the boron injection tank and associated flow path shall be demonstrated OPERABLE:

a. At least once per 31 days by energizing each heat tracing channel, and

b. At least once per 24 hours by verifying the tank and flow path temperatures to be $\geq$ 115°F. The tank temperature shall be determined by measurement. The flow path temperature shall be determined by either measurement or recirculation flow until establishment of equilibrium temperatures within the tank.

A.1

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ITS

EMERGENCY CORE COOLING SYSTEMS

REFUELING WATER STORAGE TANK

LIMITING CONDITION FOR OPERATION

LCO 3.5.4 3.5.5 The refueling water storage tank (RWST) shall be OPERABLE ~~with~~:

SR 3.5.4.2 ~~a. A contained borated water volume of between 466,200 and 487,000 gallons.~~ A.2

SR 3.5.4.3 ~~b. Between 2300 and 2400 ppm of boron, and~~

SR 3.5.4.1 ~~c. A solution temperature between 40°F and 50°F.~~

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION: Add proposed Action A L.1

Action A
Action B
Action C

With the refueling water storage tank inoperable for reasons other than Condition A, restore the tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours. A.1

SURVEILLANCE REQUIREMENTS

4.5.5 The RWST shall be demonstrated OPERABLE:

a. At least once per 7 days by:

SR 3.5.4.2 1. Verifying the contained borated water volume in the tank is ≥ 466,200 gallons and ≤ 487,000 gallons, and

SR 3.5.4.3 2. Verifying the boron concentration of the water is ≥ 2300 ppm and ≤ 2400 ppm. A.

SR 3.5.4.1 b. At least once per 24 hours by verifying the RWST temperature is ≥ 40°F and ≤ 50°F.

A.1

ITS 3.6.1

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 CONTAINMENT

ITS

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained OPERABLE. A4

APPLICABILITY: MODES 1, 2, 3, and 4

ACTION:

Inoperable   to OPERABLE status

ACTION A.1 Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. A4

ACTION B.1
ACTION B.2

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated: OPERABLE. A4

a. At least once per 31 days by verifying that all penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves, secured in their positions, except for valves that are open under administrative control as permitted by Specification 3.6.3.1. <see ITS 3.6.3>

b. ~~By verifying that each containment air lock is OPERABLE per Specification 3.6.1.3.~~ A.2

c. After each closing of the equipment hatch, by leak rate testing the equipment hatch seals, with gas at P_a, greater than or equal to 44.1 psig. Results shall be evaluated against the criteria of Specification 3.6.1.2.b as required by 10 CFR 50, Appendix J, Option B, as modified by approved exemptions, and in accordance with the guidelines contained in Regulatory Guide 1.163, dated September 1995. <See ITS 5.5.15>

d. Each time containment integrity is established after vacuum has been broken by pressure testing the butterfly isolation valves in the containment purge lines and the containment vacuum ejector line. <See ITS 5.5.15>

---

* Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked sealed or otherwise sealed in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such surveillance need not be performed more often than once per 92 days. <See ITS 3.6.3>

A.1

ITS 3.6.3

ITS

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 CONTAINMENT

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained. <See ITS 3.6.1>

APPLICABILITY: MODES 1, 2, 3, and 4

ACTION:

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

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated: <See ITS 3.6.1>

SR 3.6.3.1 a. INSERT Proposed SR 3.6.3.1 Note At least once per 31 days by verifying that all penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves, secured in their positions, except for valves ~~that~~ are locked, sealed, or otherwise secured, or ~~are~~ open under administrative control as permitted by Specification 3.6.3.1. L.5 L.6

b. By verifying that each containment air lock is OPERABLE per Specification 3.6.1.3. <See ITS 3.6.1>

c. After each closing of the equipment hatch, by leak rate testing the equipment hatch seals, with gas at P_a, greater than or equal to 44.1 psig. Results shall be evaluated against the criteria of Specification 3.6.1.2.b as required by 10 CFR 50, Appendix J, Option B, as modified by approved exemptions, and in accordance with the guidelines contained in Regulatory Guide 1.163, dated September 1995. <See ITS 5.5.15>

d. ~~Each time containment integrity is established after vacuum has been broken by~~ pressure testing the butterfly isolation valves in the containment purge lines and the containment vacuum ejector line. <See ITS 5.5.15>

SR 3.6.3.1 * Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked sealed or otherwise sealed in the closed position. These

SR 3.6.3.2 penetrations shall be verified closed during each COLD SHUTDOWN except that such surveillance need not be performed more often than once per 92 days.

INSERT Proposed SR 3.6.3.2 Note L.5

A.1

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3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 CONTAINMENT

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTION:

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

See ITS 3.6.1

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

a. At least once per 31 days by verifying that all penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves, secured in their positions, except for valves that are open under administrative control as permitted by Specification 3.6.3.1.

See ITS 3.6.3

b. By verifying that each containment air lock is OPERABLE per Specification 3.6.1.3.

See ITS 3.6.1

ITS 5.5.15 c. ~~After each closing of the equipment hatch, by leak rate testing the equipment hatch seals, with gas at P_a, greater than or equal to 44.1 psig. Results shall be evaluated against the criteria of Specification 3.6.1.2.b as required by 10 CFR 50, Appendix J, Option B, as modified by approved exemptions, and in accordance with the guidelines contained in Regulatory Guide 1.163, dated September 1995.~~

d. ~~Each time containment integrity is established after vacuum has been broken by pressure testing the butterfly isolation valves in the containment purge lines and the containment vacuum ejector line.~~

A.26

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

See ITS 3.6.3

A.1

ITS 3.6.1

CONTAINMENT SYSTEMS

CONTAINMENT LEAKAGE

ITS

LIMITING CONDITION FOR OPERATION

3.6.1 3.6.1.2 Containment ~~leakage rates~~ shall be ~~limited to:~~ OPERABLE A.4

a. An overall integrated leakage rate of less than or equal to L_a, 0.1 percent by weight of the containment air per 24 hours, at the calculated peak containment pressure P_a, greater than or equal to 44.1 psig.

b. A combined leakage rate of less than or equal to 0.60 L_a for all penetrations and valves subject to Type B and C tests, when pressurized to P_a, greater than or equal to 44.1 psig.

see ITS 5.5.15

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

ACTION: Insert Proposed ACTIONS A and B A.5

With either (a) the measured overall integrated containment leakage rate exceeding 0.75 L_a or (b) with the measured combined leakage rate for all penetrations and valves subject to Type B and C tests exceeding 0.60 L_a, ~~restore the overall integrated leakage rate to less than 0.75 L_a and the combined leakage rate for all penetrations subject to Type B and C tests to less than or equal to 0.60 L_a prior to increasing the Reactor Coolant System temperature above 200°F.~~

see ITS 5.5.15 A.3

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1 4.6.1.2 The containment and containment penetrations shall be tested by performing leakage rate testing ~~as required by 10 CFR 50, Appendix J, Option B, as modified by approved exemptions and in accordance with the guidelines contained in Regulatory Guide 1.163, dated September 1995. The provisions of Specification 4.0.2 are not applicable.~~ in accordance with the Containment Leakage Rate Testing Program. A.3

A.1

ITS 5.0

ITS

CONTAINMENT SYSTEMS

CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

5.5.15

3.6.1.2 Containment leakage rates shall be limited to:

5.5.15.c 5.5.15.d.1 5.5.15.b

a. An overall integrated leakage rate of less than or equal to L_a, 0.1 percent by weight of the containment air per 24 hours, at the calculated peak containment pressure P_a, greater than or equal to 44.1 psig. The containment design pressure is 45psig. M.20

5.5.15.d.1 5.5.15.b

b. A combined leakage rate of less than or equal to 0.60 L_a for all penetrations and valves subject to Type B and C tests, when pressurized to P_a, greater than or equal to 44.1 psig.

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

ACTION:

5.5.15.d.1

With either (a) the measured overall integrated containment leakage rate exceeding 0.75 L_a or (b) with the measured combined leakage rate for all penetrations and valves subject to Type B and C tests exceeding 0.60 L_a, restore the overall integrated leakage rate to less than 0.75 L_a and the combined leakage rate for all penetrations subject to Type B and C tests to less than or equal to 0.60 L_a prior to increasing the Reactor Coolant System temperature above 200°F.

See ITS 3.6.1 — See ITS 3.6.1

SURVEILLANCE REQUIREMENTS

5.5.15.a

4.6.1.2 The containment and containment penetrations shall be tested by performing leakage rate testing as required by 10 CFR 50, Appendix J, Option B, as modified by approved exemptions, and in accordance with the guidelines contained in Regulatory Guide 1.163, dated September 1995. ~~The provisions of Specification 4.0.2 are not applicable.~~ A.16

Nothing in these Technical Specifications shall be construed to modify the testing Frequencies required by 10CFR 50, Appendix J.

The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program. A.36

ITS 5.0

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A.1

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A.1

ITS

ITS 3.6.2

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CONTAINMENT SYSTEMS

CONTAINMENT AIR LOCKS

LIMITING CONDITION FOR OPERATION

3.6.2 3.6.1.3 ~~Each~~ Two containment air lock(s) shall be OPERABLE with: A.1

a. Both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed, and LA.1

b. An overall air lock leakage rate of less than or equal to 0.05 L_a at P_a greater than or equal to 44.1 psig. A.8

APPLICABILITY: MODES 1, 2, 3 and 4. Add proposed Condition Note 1 + Note 2 A.7

ACTION: L.3 A.5

a. With one or more containment air lock(s with one containment air lock) door inoperable: M.1

1. Action A.1 Maintain at least the OPERABLE air lock door closed within 1 hour and ~~either restore the inoperable air lock door to OPERABLE status~~ within 24 hours ~~or~~ lock the Action A.2 OPERABLE air lock door closed. A.2 A.1

2. Action A.3 ~~Operation may then continue until performance of the next required overall air lock leakage test provided that~~ the OPERABLE air lock door is verified to be locked closed at least once per 31 days. Add proposed Action A.3 NOTE A.4 L.4

3. Action D.1 Action D.2 Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. A.3

4. Add proposed Condition B ~~The provisions of Specification 3.0.4 are not applicable~~ within 1 hour M.1

b. Add proposed Action C.1 With one or more containment air lock(s) inoperable, except as the result of an inoperable interlock mechanism ~~air lock~~ door, maintain at least one air lock door closed; ~~restore the inoperable air lock to~~ Action C.2 L.2 M.2

Action C.3 ~~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. Action D.1 Action D.2 A.5

SURVEILLANCE REQUIREMENTS

4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

SR 3.6.2.1 a. By performing leakage rate testing as required by the Containment Leakage Rate Testing Program ~~10 CFR 50, Appendix J, Option B, as modified by approved exemptions, and in accordance with the guidelines contained in Regulatory Guide 1.163, dated September 1995. The provisions of Specification 4.0.2 are not applicable.~~ A.8 L.5

SR 3.6.2.2 b. At least once per ~~refueling outage~~ 24 months by verifying that only one door in each air lock can be opened at a time. L.6

Actions NOTE 1 * Entry and exit to repair the ~~inner~~ affected air lock ~~door~~ components, if inoperable, is allowed. L.1

Add Proposed Actions NOTE 2 A.5

Add Proposed Actions NOTE 3 A.6

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A.1

ITS 5.0

ITS

CONTAINMENT SYSTEMS

CONTAINMENT AIR LOCKS

LIMITING CONDITION FOR OPERATION

3.6.1.3 Each containment air lock shall be OPERABLE with: See ITS 3.6.2

a. Both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed, and

5.5.15.b 5.5.15.d.2 b. An overall air lock leakage rate of less than or equal to 0.05 L_a at P_a greater than or equal to 44.1 psig.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

See ITS 3.6.2

a. With one containment air lock door inoperable:

1. Maintain at least the OPERABLE air lock door closed and either restore the inoperable air lock door to OPERABLE status within 24 hours or lock the OPERABLE air lock door closed.+

2. Operation may then continue until performance of the next required overall air lock leakage test provided that the OPERABLE air lock door is verified to be locked closed at least once per 31 days.

3. Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

4. The provisions of Specification 3.0.4 are not applicable.

b. With a containment air lock inoperable, except as the result of an inoperable air lock door, maintain at least one air lock door closed; restore the inoperable air lock 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.

SURVEILLANCE REQUIREMENTS

5.5.15.a 4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

a. By performing leakage rate testing as required by 10 CFR 50, Appendix J, Option B, as modified by approved exemptions, and in accordance with the guidelines

5.5.15.f contained in Regulatory Guide 1.163, dated September 1995. ~~The provisions of Specification 4.0.2 are not applicable.~~

b. At least once per refueling outage by verifying that only one door in each air lock can be opened at a time. See ITS 3.6.2

Nothing in these Technical Specifications shall be construed to modify the testing Frequencies required by 10CFR50, Appendix J.

A.16

+ Entry to repair the inner air lock door, if inoperable, is allowed. See ITS 3.6.2

(A.1)

ITS 3.6.4

ITS

CONTAINMENT SYSTEMS

INTERNAL PRESSURE

LIMITING CONDITION FOR OPERATION

3.6.4 3.6.1.4 Primary containment internal air partial pressure shall be maintained > 9.0 psia and within the acceptable operation region on Figure 3.6-1.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Action A.1 With the containment internal air partial pressure < 9.0 psia or above the applicable limit shown on Figure 3.6-1, restore the internal air partial pressure to within the limits within 1 hour or be in at least
Action B.1 HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the
Action B.2 following 30 hours.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1 4.6.1.4 The primary containment internal air partial pressure shall be determined to be within the limits at least once per 12 hours.

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ITS

Figure 3.6.4-1

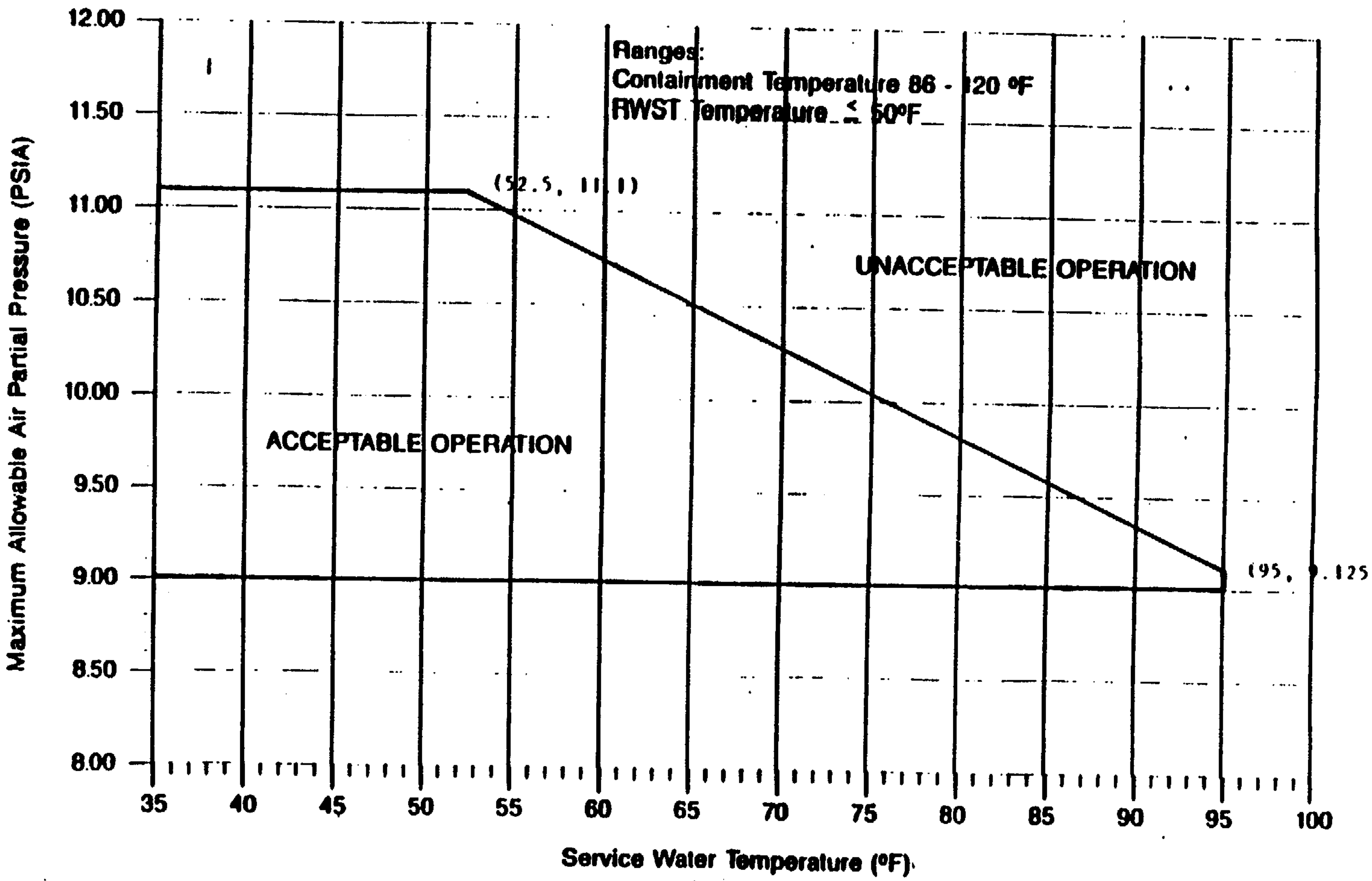

Figure 3.6-1 Containment Air Partial Pressure Versus Service Water Temperature

A.1

ITS 3.6.4

ITS 3.6.5

A.1

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ITS

CONTAINMENT SYSTEMS

AIR TEMPERATURE

LIMITING CONDITION FOR OPERATION

3.6.5

3.6.1.5 Primary containment average air temperature shall be maintained ≥ 86°F and ≤ 120°F.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Action A.1
Action B.1
Action B.2

With the containment average air temperature > 120°F or < 86°F, restore the average air temperature to within the limit within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

SR 3.6.5.1

within limits

LA.1

4.6.1.5.1 The primary containment average air temperature shall be ~~the weighted average of at least the minimum number of temperatures at the following locations~~ and shall be determined at least once per 24 hours:

LA.1

Location				Weight Factor(WF)	Min. No. of Temperature
a.	Containment dome	Elev. ~	390	0.09604	1
b.	Inside crane wall	Elev. ~	329	0.04846	2
c.	Annulus	Elev. ~	329	0.02256	2
d.	Annulus	Elev. ~	238	0.04972	1
e.	Cubicles	Elev. ~	268	0.06785 (.07513)*	2

4.6.1.5.2 The average containment air temperature shall be determined by the following relationship:

$$T_{containment} = \frac{1.0}{\left[\sum_{i=1}^{n} \frac{W_{Fi}}{T_i}\right]} \text{ where}$$

WF_i is the weight factor for the temperature T_i, of the i^{th} temperature measurement.

*Weight factor to be used for pressurizer cubicle at Elev. 268.

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A.1

ITS 3.6.1

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CONTAINMENT SYSTEMS

CONTAINMENT ~~STRUCTURAL INTEGRITY~~

ITS

LIMITING CONDITIONS FOR OPERATION

OPERABLE

3.6.1.6 ~~The structural integrity of the~~ containment shall be ~~maintained at a level consistent with the acceptance criteria in Specification 4.6.1.6.1.~~ A.4

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

OPERABLE status OPERABLE

ACTION A With the ~~structural integrity of the~~ containment not ~~conforming to the above requirements,~~ restore A.4
ACTION B ~~the structural integrity~~ to ~~within the limits~~ within ~~24~~ 1 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. M.1

SURVEILLANCE REQUIREMENTS

~~4.6.1.6.1 Containment Surfaces The structural integrity of the exposed accessible interior and exterior surfaces of the containment, including the liner plate shall be determined by~~ performing A.3
SR 3.6.1.1 visual examinations as required by ~~10 CFR 50, Appendix J, Option B, as modified by approved exemptions, and in accordance with the guidelines contained in Regulatory Guide 1.163, dated September 1995. The provisions of Specification 4.0.2 are not applicable.~~ A.3

the Containment Leakage Rate Testing Program

(A.1)

ITS 3.6.6

11-26-77

ITS

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT QUENCH SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.6 3.6.2.1 Two ~~independent~~ containment quench spray subsystems shall be OPERABLE. LA.1

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Action A Action B With one containment quench spray subsystem inoperable, restore the inoperable subsystem 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.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each containment quench spray subsystem shall be demonstrated OPERABLE:

a. At least once per 31 days by:

SR 3.6.6.1 1. 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.

2. Verifying the temperature of the borated water in the refueling water storage tank is within the limits shown on Figure 3.6-1. See ITS 3.5.4 LA.5

SR 3.6.6.2 b. Verifying ~~that on recirculation flow~~ each pump develops a discharge ~~pressure of~~ head ≥ ~~125 psig~~ the required developed head at the flow test point when tested pursuant to Specification 4.0.5. LA.2

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

SR 3.6.6.3 1. Verifying that each automatic valve in the flow path That is not locked, sealed, or otherwise secured in position actuates to its correct position on ~~a containment high-high~~ an actual or simulated actuation signal. LA.3 L.1

SR 3.6.6.4 2. Verifying that each spray pump starts automatically on ~~a containment high-high~~ an actual or simulated actuation signal. L.2 LA.3

A.1

ITS CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.6.6.5 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. | LA.4

A.1

CONTAINMENT SYSTEMS

CONTAINMENT RECIRCULATION SPRAY SYSTEM

ITS

LIMITING CONDITION FOR OPERATION

Four subsystems

A.2

LCO 3.6.7

3.6.2.2 Two trains of containment recirculation spray shall be OPERABLE. ~~Each train shall consist of:~~

a. 1. ~~One inside containment recirculation spray subsystem composed of an inside containment recirculation spray pump, associated heat exchanger and flow path, and~~

2. ~~One outside containment recirculation spray subsystem composed of an outside containment recirculation spray pump, associated heat exchanger and flow path, and a casing cooling pump and a flow path capable of transferring fluid from the casing cooling tank to the suction of the outside recirculation spray pump.~~

LA.1

b. One casing cooling tank ~~(shared with both trains)~~ shall be OPERABLE ~~with:~~ LA.2

Verify

SR 3.6.7.2 1. Contained borated water volume of at least 116,500 gallons.

SR 3.6.7.3 2. Between 2300 and 2400 ppm boron concentration.

SR 3.6.7.1 3. A solution temperature ≥ 35°F and ≤ 50° F.

A.3

Applicability APPLICABILITY: Modes 1, 2, 3 and 4

ACTION:

Action A
Action E

a. With one containment recirculation spray subsystem inoperable in one containment recirculation spray train, restore the inoperable subsystem to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours; restore the inoperable subsystem to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the next 30 hours.

Actions B,C
Action E

b. With two containment recirculation spray subsystems inoperable in one containment recirculation spray train, restore one inoperable subsystem 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.

Insert 1

L.1

Action D
Action E

c. With the casing cooling tank inoperable, restore the tank 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.

Insert 2

L.2

Insert proposed Action F

A.4

A.1

ITS 3.6.7

ITS

CONTAINMENT SYSTEMS

CONTAINMENT RECIRCULATION SPRAY SYSTEM

SURVEILLANCE REQUIREMENTS

4.6.2.2.1 Each containment recirculation spray subsystem and casing cooling subsystem shall be demonstrated OPERABLE:

SR 3.6.7.4
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.

SR 3.6.7.5
b. Verify each RS and casing cooling pump's developed head at the flow test point is greater than or equal to the required developed head. The frequency shall be in accordance with the Inservice Testing Program.

c. At least once per 18 months by: L.3

SR 3.6.7.6
1. Verifying that on ~~a Containment Pressure High-High signal~~ an actual or simulated actuation signal each casing cooling pump starts automatically ~~without time delay~~ and each recirculation spray pump starts automatically ~~with the following time delays: inside 195 ± 9.75 seconds, outside 210 ± 21 seconds.~~ LA.4 LA.3

SR 3.6.7.7
2. Verifying that each automatic valve in the flow path actuates to its Insert ~~correct~~ position on ~~a containment pressure high-high~~ test signal. L.4 L.3 LA.4

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. LA.5

4.6.2.2.2 The casing coolant tank shall be demonstrated OPERABLE:

a. At least once per 7 days by:

SR 3.6.7.2
1. Verifying the contained borated water volume in the tank is ≥ 116,500 gallons, and A.3

SR 3.6.7.3
2. Verifying the boron concentration of the water is ≥ 2300 ppm and ≤ 2400 ppm. A.3

SR 3.6.7.1
b. At least once per 24 hours by verifying the casing cooling tank temperature is ≥ 35°F and ≤ 50°F. A.3

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A.1

ITS 3.6.8

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ITS

CONTAINMENT SYSTEMS

CHEMICAL ADDITION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.8 3.6.2.3 The chemical addition system shall be OPERABLE ~~with:~~

~~a. A chemical addition tank containing a volume of between 4800 and 5500 gallons of between 12 and 13 percent by weight NaOH solution, and~~

~~b. A chemical addition flow path capable of adding NaOH solution from the chemical addition tank to both containment quench spray system pumps via the RWST.~~ A.2

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Action A Action B With the chemical addition system inoperable, restore the system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the spray addition system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.3 The chemical addition system shall be demonstrated OPERABLE:

SR 3.6.8.1 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.

SR 3.6.8.2 b. At least once per 6 months by: is ≥ 4800 gallons and ≤ 5500 gallons A.2

1. Verifying the contained solution volume in the tank, and

SR 3.6.8.3 2. Verifying the concentration of the NaOH solution ~~by chemical analysis~~. LA.1

is ≥ 12% and ≤ 13% A.2

ITS

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.6.8.4 c. At least once per 18 months, ~~during shutdown,~~ LA.2 by verifying that each automatic valve in the flow path that is not locked, sealed, or otherwise secured in position L.2 actuates to its correct position on ~~a containment pressure high-high test~~ LA.3 signal. an actual or simulated actuation L.1

SR 3.6.8.5 d. At least once per 5 years by verifying individual flow from the RWST and the chemical addition tank ~~thru the drain lines in the cross connection between the respective tanks.~~ LA.4

A.1

ITS 3.6.3

ITS

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 3.6.3.1 Each containment isolation valve shall be OPERABLE.*

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

ACTION: Insert proposed Action Note 3 A.2

Insert proposed Action Note 4 A.3

Action Note 2 With one or more of the isolation valves inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open and: A.8

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

Action A.1 Action C.1 b. Isolate each affected penetration within ~~4~~ 72 hours by use of at least one deactivated automatic valve secured in the isolation position, or L.3

Action A.1 Action C.1 c. Isolate each affected penetration within ~~4~~ 72 hours by use of at least one closed manual valve or blind flange; or

Insert proposed Condition B A.5

Action D.1 Action D.2 d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

~~The provisions of Specification 3.0.4 do not apply.~~ A.6

SURVEILLANCE REQUIREMENTS

Insert proposed ACTIONS A.2 and C.2 M.1

~~4.6.3.1.1 Each containment isolation valve shall be demonstrated OPERABLE:~~

~~a. At least once per 92 days by cycling each weight or spring loaded check valve testable during plant operation, through one complete cycle of full travel and verifying that each check valve remains closed when the differential pressure in the direction of flow is less than 1.2 psid and opens when the differential pressure in the direction of flow is greater than or equal to 1.2 psid but less than 5.0 psid.~~ A.10

Action Note 1 * Locked or ~~sealed closed valves~~ may, except for 36 inch purge and exhaust valves, 18 inch containment vacuum breaking valve, 8 inch purge bypass valve, and steam jet air ejector suction flowpaths, be opened on an intermittent basis under administrative control. M.2

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ITS

SURVEILLANCE REQUIREMENTS (Continued)

b. Prior to returning the valve to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit by performance of the applicable cycling test and verification of isolation time. L.1

4.6.3.1.2 Each containment isolation valve shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by: LA.1

SR 3.6.3.4 a. Verifying that on a Phase A containment isolation test signal, each Phase A isolation valve actuates to its isolation position.

b. Verifying that on a Phase B containment isolation test signal, each Phase B isolation valve actuates to its isolation position.

c. Verifying that on a Containment Purge and Exhaust isolation signal, each Purge and Exhaust valve actuates to its isolation position. <See ITS 3.9.4>

SR 3.6.3.5 d. Cycling each weight or spring loaded check valve not testable during plant operation, through one complete cycle of full travel and verifying that each check valve remains closed when the differential pressure in the direction of flow is less than 1.2 psid and opens when the differential pressure in the direction of flow is greater than or equal to 1.2 psid but less than 5.0 psid.

SR 3.6.3.3 4.6.3.1.3 The isolation time of each power operated or automatic containment isolation valve shall be determined to be within its limit when tested pursuant to Specification 4.0.5

in accordance with the Inservice Testing Program

A.7

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A.1

ITS 3.9.4

ITS

SURVEILLANCE REQUIREMENTS (Continued)

b. Prior to returning the valve to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit by performance of the applicable cycling test and verification of isolation time.

See ITS 3.6.3

4.6.3.1.2 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 containment isolation test signal, each Phase A isolation valve actuates to its isolation position.

b. Verifying that on a Phase B containment isolation test signal, each Phase B isolation valve actuates to its isolation position.

SR 3.9.4.2 c. Verifying that on a Containment Purge and Exhaust isolation signal, each Purge and Exhaust valve actuates to its isolation position. LA.1

or manual initiation M.1

d. Cycling each weight or spring loaded check valve not testable during plant operation, through one complete cycle of full travel and verifying that each check valve remains closed when the differential pressure in the direction of flow is less than 1.2 psid and opens when the differential pressure in the direction of flow is greater than or equal to 1.2 psid but less than 5.0 psid.

See ITS 3.6.3

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

ITS 3.3 3.3.3

Instrumentation
Post Accident Monitoring (PAM) Instrumentation
~~CONTAINMENT SYSTEMS~~

~~3/4.6.4 COMBUSTIBLE GAS CONTROL~~ A.1

~~HYDROGEN ANALYZERS~~

LIMITING CONDITION FOR OPERATION

LCO 3.3.3 Table 3.3.3-1 Item 12

3.6.4.1 Two independent containment hydrogen analyzers ~~(shared with Unit 2)~~ shall be OPERABLE. LA.1

APPLICABILITY: MODES 1 and 2 3 M.2

ACTION: INSERT Note 1 3.0.4 exception L.4

Insert proposed note 2 A.2

Action A — a. With one hydrogen analyzer inoperable, restore the inoperable analyzer to OPERABLE status within 30 days ~~or be in at least HOT STANDBY within the next 6 hours~~. L.1

INSERT proposed Action B

Action C, Action D — b. With both hydrogen analyzers inoperable, restore at least one analyzer to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours. AND Be in MODE 4 within 12 hours M.2

~~NOTE: OPERABILITY of the hydrogen analyzers includes OPERABILITY of the respective Heat Tracing System.~~ LA.1

SURVEILLANCE REQUIREMENTS

SR 3.3.3.2

4.6.4.1 Each hydrogen analyzer shall be demonstrated OPERABLE at least once per ~~92 days~~ 18 months ~~on a STAGGERED TEST BASIS~~ by performing a CHANNEL CALIBRATION ~~using sample gas containing:~~ L.3

~~a. One volume percent (±.25%) hydrogen, balance nitrogen, and~~ LA.2

~~b. Four volume percent (±.25%) hydrogen, balance nitrogen.~~

~~NOTE: The Channel Calibration Test shall include startup and operation of the Heat Tracing System.~~ LA.1

A.1

ITS 3.6.9

ITS

CONTAINMENT SYSTEMS

ELECTRIC HYDROGEN RECOMBINERS

LIMITING CONDITION FOR OPERATION

3.6.9 3.6.4.2 Two separate and independent containment hydrogen recombiner systems (shared with Unit 2) shall be OPERABLE. LA.1

APPLICABILITY: MODES 1 and 2.

ACTION:

A.1 C.1 a. 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.

INSERT Proposed Actions B.1 and B.2 L.2

A.1 NOTE b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.6.4.2 Each hydrogen recombiner system shall be demonstrated OPERABLE once per 18 months by:

3.6.9.1 a. Verifying, during a recombiner system functional test, that the minimum heater sheath temperature increases to greater than or equal to 700°F within 90 minutes and is maintained for at least 2 hours and that each hydrogen recombiner purge blower operates for at least 15 minutes. LA.2

3.6.9.1 b. Verifying, during a recombiner system functional test using containment atmospheric air at a flow rate of greater than or equal to 50 scfm, that the heater temperature increases to greater than or equal to 1100°F within 5 hours and is maintained for at least 4 hours. LA.2

3.6.9.3 c. 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. LA.2

3.6.9.2 d. 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.). LA.2

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

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A.1

ITS 3.6.3

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CONTAINMENT SYSTEMS

3/4.6.5 SUBATMOSPHERIC PRESSURE CONTROL SYSTEM

STEAM JET AIR EJECTOR

LIMITING CONDITION FOR OPERATION

isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured L.4

3.6.3 ~~3.6.5.1~~ The inside and outside isolation valves in the steam jet air ejector suction line shall be closed.

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

ACTION: Insert proposed Action Note 3 A.3

Action NOTE 2 Insert proposed Action Note 4 A.8

Action A.1 With the inside or outside isolation valve in the steam jet air ejector suction line not closed, ~~restore the valve to the closed position~~ within ~~1~~ 4 hour~~s~~ or be in ~~HOT SHUTDOWN within the next 12 hours.~~ 5 L.2

Action B.1 Action B.2 MODE 3 within 6 hours and MODE 5 within 36 hours M.3

INSERT proposed Action A.2 M.1

INSERT proposed Condition B A.5

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1 ~~4.6.5.1.1~~ The steam jet air ejector suction line outside isolation valve shall be determined to be in the closed position ~~by a visual inspection~~ ~~prior to increasing the Reactor Coolant System temperature above 200°F and~~ at least once per 31 days thereafter if the valve is not locked, sealed or otherwise secured in the closed position. LA.2 A.9

SR 3.6.3.2 ~~4.6.5.1.2~~ The steam jet air ejector suction line inside isolation valve shall be determined to be in the closed position prior to increasing the Reactor Coolant System temperature above 200°F.

(A.1)

ITS

3/4.7 PLANT SYSTEMS

3/4.7.1 TURBINE CYCLE

SAFETY VALVES

Insert proposed Actions Note (L.1)

LIMITING CONDITION FOR OPERATION

3.7.1 3.7.1.1 Five ~~All~~ main steam line code safety valves associated with each steam generator ~~of an unisolated reactor coolant loop~~ shall be OPERABLE ~~with lift settings as specified in Table 3.7-2~~ (A.3)

Appl: APPLICABILITY: MODES 1, 2 and 3.

Action A ACTION: Insert proposed Action A and first Condition of Condition B (L.2)

Action B two a. With ~~one~~ or more main steam line code safety valves inoperable, operation in MODES 1, 2 and 3 may proceed provided, that within 4 hours, either the inoperable valve is restored to OPERABLE status or the Power Range Neutron Flux High Setpoint trip is reduced per Table 3.7-1; otherwise, be in at least HOT STANDBY within the next 6 hours and in ~~COLD SHUTDOWN~~ MODE 4 within the ~~following 30~~ 12 hours. (L.3) (M.2)

Action C Insert proposed Required Action B.2 Note

~~b. The provisions of Specification 3.0.4 are not applicable~~ (M.1)

or if one or more steam generators have ≥ 4 MSSVs inoperable, (M.2)

SURVEILLANCE REQUIREMENTS

SR 3.7.1.1 ~~4.7.1.1 No additional Surveillance Requirements other than those required by Specification 4.0.5.~~

Insert proposed SR 3.7.1.1 (L.4)

A.1

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ITS

TABLE 3.7-1

MAXIMUM ALLOWABLE POWER RANGE NEUTRON FLUX HIGH SETPOINT WITH INOPERABLE STEAM LINE SAFETY VALVES

Table 3.7.1-1

Maximum Number of ~~Inoperable~~ OPERABLE Safety Valves on Any Operating Steam Generator	Maximum Allowable Power Range Neutron Flux High Setpoint (Percent of RATED THERMAL POWER)
~~1~~ 4	52
~~2~~ 3	37
~~3~~ 2	21

A.2

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A.1

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ITS 3.7.3

ITS

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3.7.3 Insert proposed Specification 3.7.3 M.1

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3.7.4

Insert proposed specification 3.7.4

M.1

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ITS
Table 3.7.1-2

ITS 3.7.1

L.5

A.1

A.1

TABLE 3.7-2

STEAM LINE SAFETY VALVES PER LOOP

VALVE NUMBER	LIFT SETTING (± 3%)*	~~ORIFICE SIZE~~
a. SV-MS 101 A, B, C	1085 psig	~~16 in^2~~
b. SV-MS 102 A, B, C	1095 psig	~~16 in^2~~
c. SV-MS 103 A, B, C	1110 psig	~~16 in^2~~
d. SV-MS 104 A, B, C	1120 psig	~~16 in^2~~
e. SV-MS 105 A, B, C	1135 psig	~~16 in^2~~

* ~~The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.~~ All steam line safety valves shall be returned to an "as left" lift setting of their nominal lift setting ± 1%.

SR 3.7.1.1

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ITS

PLANT SYSTEMS (A.1)

AUXILIARY FEEDWATER SYSTEM (AFW)

LIMITING CONDITION FOR OPERATION

LCO 3.7.5 3.7.1.2 At least three ~~independent~~ steam generator auxiliary feedwater ~~pumps and associated flow paths~~ trains shall be OPERABLE ~~with:~~ (A.3) (LA.1)

~~a. Two motor driven auxiliary feedwater pumps, each capable of being powered from separate emergency busses, and~~

~~b. One steam turbine driven auxiliary feedwater pump capable of being powered from an OPERABLE steam supply system.~~

add proposed LCO Note (M.1)

APPLICABILITY: MODES 1, 2 and 3. (L.3)

MODE 4 when steam generator is relied upon for heat removal (M.1)

ACTION:

Action A — add proposed Action A ← and 10 days from discovery to meet the LCO (L.8)

Action B — a. With one auxiliary feedwater ~~pump~~ train inoperable, restore the required auxiliary feedwater ~~pumps~~ to an OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the following 6 hours. (A.3)

MODE 4 within 18 hours (M.1)

Action C — (A.1) add first proposed Condition C; Trains (A.3)

in Modes 1, 2, or 3

b. With two auxiliary feedwater ~~pumps~~ inoperable be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within ~~the following 6~~ 18 hours. (L.9)

add proposed Note to Action D (L.6)

Action D — c. With three auxiliary feedwater ~~pumps~~ Trains inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater ~~pump~~ Train to OPERABLE status as soon as possible. (A.3)

Action E — add proposed Action E (M.1)

SURVEILLANCE REQUIREMENTS

~~4.7.1.2 In addition to the requirements of Specification 4.0.5, each auxiliary feedwater pump shall be demonstrated OPERABLE:~~ (A.1)

a. At least once per 31 days by:

SR 3.7.5.1 1. Verifying that each valve (manual, power operated or automatic) in the flow path and both steam supply flow paths to the steam turbine driven pump that is not locked, sealed, or otherwise secured in position, is in its correct position. (A.2) (L.2)

add proposed Note to SR 3.7.5.2

SR 3.7.5.2 b. ~~At least once per 92 days on a STAGGERED TEST BASIS by:~~ Test in accordance with the IST program (L.4)

1. Verifying that each pump develops adequate discharge pressure and flow. ~~The acceptance criterion shall be consistent with Specification 4.0.5.~~ The provisions of Specification 4.0.4 are not applicable to steam turbine driven pump testing. (L.2)

Note in SR 3.7.5.2

ITS

A.1

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

LA.2

L.7

c. At least once per 18 months during shutdown by:

add proposed Note to SR 3.7.5.3

not locked, sealed, or otherwise secured in position

M.1

3.7.5.3 1. Verifying that each automatic valve in the flow path actuates to its correct position on an auxiliary feedwater actuation test signal.

actual or

L.1

add proposed Notes to SR 3.7.5.4

3.7.5.4 2. Verifying that each auxiliary feedwater pump starts automatically upon receipt of an auxiliary feedwater actuation test signal.

L.2 M.1

actual or

L.1

3.7.5.5 d. The auxiliary feedwater system flow paths shall be demonstrated OPERABLE prior to entry into MODE 3 following each COLD SHUTDOWN by performing a flow test to verify the normal flow path from the emergency condensate storage tank through each auxiliary feedwater pump to its associated steam generator.

L.5

Mode 5, 6, or defueled for a cumulative period of > 30 days

ITS

3.7 PLANT SYSTEMS

3.7.6 EMERGENCY CONDENSATE STORAGE TANK (ECST) (A.1)

LIMITING CONDITION FOR OPERATION

LCO 3.7.6 ~~3.7.1.3~~ The ~~emergency condensate storage tank (ECST)~~ shall be OPERABLE with a minimum contained volume of 110,000 gallons of water. (A.3)

moved to SR

APPLICABILITY: MODES 1, 2 and 3.
MODE 4 when steam generator is relied upon for heat removal (M.1)

ACTION:

Action A.1 Verify by ADMINISTRATIVE means ~~With the~~ condensate storage tank inoperable, within 4 hours ~~either~~ and every 12 hours thereafter (A.2)

(A.2)

a. ~~Restore the ECST to OPERABLE status or be in HOT SHUTDOWN within the next 12 hours, or~~ (A.2)

Action A.2 / Action B b. ~~Demonstrate~~ the OPERABILITY of ~~a~~ the ~~300,000 gallon~~ condensate storage tank ~~as a backup supply to the auxiliary feedwater pumps~~ and restore the emergency condensate storage tank to OPERABLE status within 7 days or be in MODE 3 within 6 hours and HOT SHUTDOWN without reliance on steam generator for heat removal within the next ~~12~~ 24 hours. (LA.1) (M.1) (M.2) (L.1)

SURVEILLANCE REQUIREMENTS

SR 3.7.6.1 ~~4.7.1.3.1~~ The emergency condensate storage tank shall be demonstrated OPERABLE at least once per 12 hours by verifying ≥ 110,000 gallons ~~the contained water volume is within its limits when the tank is the supply source for the auxiliary feedwater pumps.~~ (A.3)

Action A.1 ~~4.7.1.3.2 The condensate storage tank shall be demonstrated OPERABLE at least once per 12 hours by verifying that the water level in the condensate storage tank is sufficient to repenish the ECST to 110,000 gallon whenever the condensate storage tank is the supply source for the auxiliary feedwater pumps.~~ (A.2)

ITS

3.7 PLANT SYSTEMS

3.7.7 ACTIVITY SECONDARY SPECIFIC

A.1

LIMITING CONDITION FOR OPERATION

LCO 3.7.7 3.7.1.4 The specific activity of the secondary coolant system shall be ≤0.10 μCi/gram DOSE EQUIVALENT I-131.

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

ACTION:

Action A With the specific activity of the secondary coolant system > 0.10 μCi/gram DOSE EQUIVALENT I-131, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

SR 3.7.7.1 4.7.1.4 The specific activity of the secondary coolant system shall be determined to be within the limit ~~by performance of the sampling and analysis program of Table 4.7-1~~.

of ≤ 0.1 μCi/gm DOSE EQUIVALENT I-131

every 31 days

L.1

M.1

ITS

TABLE 4.7-1

SECONDARY COOLANT SYSTEM SPECIFIC ACTIVITY SAMPLE AND ANALYSIS PROGRAM

ITS	TYPE OF MEASUREMENT AND ANALYSIS	SAMPLE AND ANALYSIS FREQUENCY	
	1. Gross Activity Determination	At least once per 72 hours	L.1
SR 3.7.7.1	2. Isotopic Analysis for DOSE EQUIVALENT I-131 Concentration	a) 1 per 31 days, whenever the gross activity determination indicates iodine concentrations greater than 10% of the allowable limit. b) 1 per 6 months, whenever the gross activity determination indicates iodine concentrations below 10% of the allowable limit.	M.1

A.1

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ITS

PLANT SYSTEMS

MAIN STEAM TRIP VALVES

LIMITING CONDITION FOR OPERATION

LCO 3.7.1.5 Each main steam trip valve shall be OPERABLE.

Appl. APPLICABILITY: MODES ~~1,~~ 2 and 3. MODES except when all MSTVs are closed and deactivated L.1

ACTION:

Action A Action B — Insert proposed Condition C Note

MODES 1 - With one main steam trip valve inoperable, POWER OPERATION may continue provided the inoperable valve is either restored to OPERABLE status ~~or closed~~ within ~~4~~ 8 hours; otherwise, be in ~~HOT SHUTDOWN~~ MODE 2 within ~~the next 12~~ 6 hours. M.4 L.2 M.5

Action C — or more

MODES 2 - With one main steam trip valve inoperable, subsequent and 3 operation in MODES ~~1,~~ 2 or 3 may proceed ~~and the provisions of specification 3.0.4 are not applicable~~ provided the main steam trip valve is ~~maintained~~ closed; ~~otherwise,~~ within 8 hours be in HOT SHUTDOWN within ~~the next 12~~ 6 hours. L.3 M.3

Action D — and MODE 4 within 12 hours

Insert proposed Action C.2 M.1

SURVEILLANCE REQUIREMENTS

Insert proposed SR 3.7.2.1 Note L.4

4.7.1.5 Each main steam trip valve shall be demonstrated OPERABLE by verifying full closure within 5 seconds when tested pursuant to ~~Specification 4.0.5~~. the Inservice Testing Program A.2

Insert proposed SR 3.7.2.2 M.2

PLANT SYSTEMS

SECONDARY WATER CHEMISTRY

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10

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PLANT SYSTEMS

STEAM TURBINE ASSEMBLY

LIMITING CONDITION FOR OPERATION

3.7.1.6 The structural integrity of the steam turbine assembly shall be maintained. 10

APPLICABILITY: MODES 1 and 2

ACTION: With the structural integrity of the steam turbine assembly not conforming to the above requirement restore the structural integrity of the steam turbine prior to placing it in service.

SURVEILLANCE REQUIREMENTS

4.7.1.6 The structural integrity of the steam turbine assembly shall be demonstrated: 10

a. At least once per 40 months, during shutdown, by a visual and surface inspection of the steam turbine assembly at all accessible locations, and

b. At least once per 10 years, during shutdown, by disassembly of the turbine and performing a visual, surface and volumetric inspection of all normally inaccessible parts.

R1

CTS 3.7.1.7

PLANT SYSTEMS

TURBINE OVERSPEED

LIMITING CONDITION FOR OPERATION

3.7.1.7 At least one turbine overspeed protection system shall be OPERABLE.

APPLICABILITY: MODE 1, 2 and 3

ACTION:

With the above required turbine overspeed protection system inoperable, within 6 hours either restore the system to OPERABLE status or isolate the turbine from the steam supply.

R.1

SURVEILLANCE REQUIREMENT

4.7.1.7.1 The provisions of Specification 4.0.4 are not applicable.

4.7.1.7.2 The above required turbine overspeed protection system shall be demonstrated OPERABLE:

a. By cycling each of the following valves through at least one complete cycle from the running position and verifying movement of each of the valves through one complete cycle from the running position by direct observation:

1. Four Turbine Throttle valves at least once per 92 days,
2. Four Turbine Governor valves at least once per 92 days, *
3. Four Turbine Reheat Stop valves at least once per 18 months, and
4. Four Turbine Reheat Intercept valves at least once per 18 months.

b. At least once per 18 months, by performance of CHANNEL CALIBRATION on the turbine overspeed protection instruments.

c. At least once per 40 months **, by disassembly of at least one of each of the above valves and performing a visual and surface inspection of all valve seats, disks and stems and verifying no unacceptable flaws or corrosion. If unacceptable flaws or excessive corrosion are found, all other valves of that type shall be inspected unless the nature of the problem can be attributed to a service condition specific to that valve.

* Testing of the turbine governor valves may be suspended during end-of-cycle power coastdown operation between 835 MWe and 386 MWe.

** For reheat stop and reheat intercept valves, the inspection cycle may be increased to a maximum of once per 60 months provided there is no indication of operational distress.

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CTS 3.7.2.1

PLANT SYSTEMS

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

LIMITING CONDITION FOR OPERATION

3.7.2.1 The temperatures of both the primary and secondary coolants in the steam generators shall be > 70°F when the pressure of either coolant in the steam generator is > 200 psig.

APPLICABILITY: At all times.

ACTION:

With the requirements of the above specification not satisfied:

a. Reduce the steam generator pressure of the applicable side to ≤ 200 psig within 30 minutes, and

b. Perform an engineering evaluation to determine the effect of the overpressurization on the structural integrity of the steam generator. Determine that the steam generator remains acceptable for continued operation prior to increasing its temperatures above 200°F.

R1

SURVEILLANCE REQUIREMENTS

4.7.2.1 The pressure in each side of the steam generator shall be determined to be < 200 psig at least once per hour when the temperature of either the primary or secondary coolant is < 70°F.

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

3/4.7.3.1 COMPONENT COOLING WATER SUBSYSTEM - OPERATING

LIMITING CONDITION FOR OPERATION

3.7.3.1 Three component cooling water subsystems (shared with Unit 2) shall be OPERABLE *, ** with each subsystem consisting of:

a. One OPERABLE component cooling water pump and,

b. One OPERABLE component cooling water heat exchanger.

APPLICABILITY: Either Unit in MODES 1, 2, 3, or 4.

ACTION:

a. With one required component cooling water subsystem inoperable, return the component cooling subsystem to OPERABLE status within the next 7 days, or place both units in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 24 hours.

b. With two required component cooling water subsystems inoperable, place both units in HOT SHUTDOWN within the next 12 hours, and within the next hour, initiate actions to place both units in COLD SHUTDOWN and continue until COLD SHUTDOWN is achieved.

c. With no component cooling water available to supply the residual heat removal heat exchangers to cool the units, place both units in HOT SHUTDOWN within the next 12 hours and remain in HOT SHUTDOWN until alternate means of decay heat removal can be implemented. Continue actions until both units are in COLD SHUTDOWN.

R.1

* For the purpose of this Technical Specification, each subsystem is considered OPERABLE if it is operating or if it can be placed in service from a standby condition by manually unisolating a standby heat exchanger and/or manually starting a standby pump.

** For the purpose of service water system upgrades associated with the supply and return piping to/from the component cooling water heat exchangers (CCHXs) which includes encased in concrete and exposed piping from 36" headers to the first isolation valve, the component cooling water subsystems shall be considered OPERABLE with only one service water loop to/from the CCHXs, provided all other requirements in this specification are met. This condition is permitted two times only (once for each SW loop) for a duration of up to 35 days each. During each period of operation with only one SW loop available to/from the CCHXs, the provisions of Specification 3.0.4 are not applicable. Upon completion of the work associated with the second 35-day period, this footnote will no longer be applicable.

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

3/4.7.3.1 COMPONENT COOLING WATER SUBSYSTEM – OPERATING

SURVEILLANCE REQUIREMENTS

4.7.3.1 Three component cooling water subsystems shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing in the flow path of the residual heat removal system that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. Each component cooling water pump shall be tested in accordance with Specification 4.0.5.

R.1

CTS 3.7.3.2

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

3/4.7.3.2 COMPONENT COOLING WATER SUBSYSTEM – SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.7.3.2 Two component cooling water subsystems (shared with Unit 2) shall be OPERABLE* with each subsystem consisting of:

a. One OPERABLE component cooling water pump and,

b. One OPERABLE component cooling water heat exchanger.

APPLICABILITY: Both Units in MODES 5 or 6.

ACTION:

With one required component cooling water subsystem inoperable, immediately suspend all operations involving an increase in the reactor decay heat load or a reduction in boron concentration of the Reactor Coolant System.

R.1

SURVEILLANCE REQUIREMENTS

4.7.3.2 At least two component cooling water subsystems shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) the flow path of the residual heat removal system that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. Each component cooling water pump shall be tested in accordance with Specification 4.0.5.

* For the purposes of this Technical Specification, each subsystem is considered OPERABLE if it is operating or if it can be placed in service from a standby condition by manually unisolating a standby heat exchanger and/or manually starting a standby pump.

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A.1

ITS

PLANT SYSTEMS

3/4.7.4 SERVICE WATER SYSTEM

3/4.7.4.1 SERVICE WATER SYSTEM – OPERATING

LIMITING CONDITION FOR OPERATION

3.7.8

3.7.4.1 Two service water loops ~~(shared with Unit 2)~~ shall be OPERABLE ~~with each loop consisting of:~~ A.2 A.4

~~a. Two OPERABLE service water pumps (excluding auxiliary service water pumps) with their associated normal and emergency power supplies,* and~~ A.9

~~b. An OPERABLE flow path capable of providing cooling for OPERABLE plant components and transferring heat to the service water reservoir.*~~ LA.1

APPLICABILITY: ~~Either Unit in~~ MODES 1, 2, 3 or 4. A.2

ACTION:

Action A.1 a. With one service water pump inoperable, within 72 hours throttle component cooling water heat exchanger flows ~~in accordance with approved operating procedures~~ to ensure the remaining service water pumps are capable of providing adequate flow to the recirculation spray heat exchangers. ~~The provisions of Specification 3.0.4 are not applicable once component cooling heat exchangers flows are throttled.~~ L.2 A.3

Action B.1 Action B.2 Action D.1 Action D.2 b. With two service water pumps inoperable, ~~perform ACTION 3.7.4.1.a within~~ 1 hour and restore at least one service water pump to OPERABLE status within 72 hours, or ~~place both units~~ be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. A.1 A.2

Action C.1 Action D.1 Action D.2 c. With one service water loop inoperable, except as provided in ACTION 3.7.4.1.a, restore the inoperable loop to OPERABLE status within 72 hours, or ~~place both units~~ be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. A.2

throttle component cooling heat exchanger flow A.1

~~* For the purpose of service water system upgrades associated with the supply and return piping to/from the component cooling water heat exchangers (CCHXs) which includes encased in concrete and exposed piping from the 36" headers to the first isolation valve, one of the two service water (SW) loops is permitted to temporarily bypass the CCHXs, provided all other requirements in this specification are met. This condition is permitted two times only (once for each SW loop) for a duration of up to 35 days each. During each period of operation with only one SW loop available to/from the CCHXs, four out of four SW pumps (excluding the auxiliary SW pumps) shall remain OPERABLE. With one SW pump inoperable, work may continue provided actions are taken to either restore the pump to OPERABLE status within 72 hours or restore both SW headers to/from the CCHXs to OPERABLE status within 72 hours, or place both units in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. During each period of operation with only one SW loop available to/from the CCHXs, the automatic closure feature of the SW valves servicing the CCHXs shall be defeated to ensure SW flow to the CCHXs is not interrupted. The automatic closure will not be defeated when the 168-hour Action Statement per Section 3.7.4.1.d is entered during these 35-day periods of operation. During each period of operation with only one SW loop available to/from the CCHXs, the provisions of Specification 3.0.4 are not applicable, provided two SW loops are capable of providing cooling for the other OPERABLE plant components. Upon completion of the work associated with the second 35-day period, this footnote will no longer be applicable.~~ A.4

A.1

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PLANT SYSTEMS

ITS

3/4.7.4 SERVICE WATER SYSTEM

3/4.7.4.1 SERVICE WATER SYSTEM – OPERATING

LIMITING CONDITION FOR OPERATION

Action C.1 Completion Time Note

d. The allowable time that one of the two service water loops can be inoperable as specified in ACTION 3.7.4.1.c may be extended beyond 72 hours up to 168 hours as part of service water system upgrades* provided 3 out of 4 service water pumps (the third pumps does not require auto start capability) and 2 out of 2 auxiliary service water pumps have been OPERABLE since initial entry into the action statement and remain OPERABLE during the extended action statement or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. LA.5

Action D.1 D.2

Actions E.1 E.2

e. With two service water loops be inoperable for reasons other than described in ACTION 3.7.4.1.b, ~~place both units~~ be in HOT SHUTDOWN within 12 hours and within the following hour, initiate actions to ~~place both units~~ be in COLD SHUTDOWN and continue actions until ~~both units are~~ in COLD SHUTDOWN. A.2

SURVEILLANCE REQUIREMENTS

4.7.4.1 At least two service water loops shall be demonstrated OPERABLE: Insert SR 3.7.8.1 NOTE A.5

SR 3.7.8.1

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. ~~At least once per 6 months by measurement of the movement of the pumphouse and wing walls.~~ LA.2

c. At least once per 18 months ~~during shutdown~~ by: LA.3 L.1

SR 3.7.8.2

1. Verifying that each automatic valve that is not locked, sealed, or otherwise secured in position ~~servicing safety related equipment~~ in the flow path actuates to its correct position on an actual or simulated ~~safety injection~~ actuation signal. A.6 LA.6

2. ~~Verifying that each automatic service water valve actuates to its correct position on an actual or simulated containment high-high signal.~~ A.7 LA.4

SR 3.7.8.3

d. ~~Each service water pump will be tested in accordance with Specification 4.0.5.~~ A.8

Insert SR 3.7.8.3 M.1

~~* Isolation of one service water loop for up to 168 hours is permitted only as part of service water system upgrades. System upgrades include modification and maintenance activities associated with the installation of new discharge headers and spray arrays, mechanical and chemical cleaning of service water piping and valves, pipe repair and replacement, valve repair and replacement, installation of corrosion mitigation measures and inspection of and repairs to buried piping interior coatings and pump or valve house components.~~ LA.5

CTS 3.7.4.2

PLANT SYSTEMS

3/4.7.4 SERVICE WATER SYSTEM

3/4.7.4.2 SERVICE WATER SYSTEM – SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.7.4.2 One service water loop (shared with Unit 2) shall be OPERABLE consisting of:

a. Two OPERABLE service water pumps (or auxiliary service water pumps) with their associated normal and emergency power supplies, and

b. An OPERABLE flow path capable of providing cooling for OPERABLE plant components and transferring heat to the service water reservoir or, if using auxiliary service water pumps, to the North Anna reservoir.

APPLICABILITY: Both Units in MODES 5 or 6.

ACTION:

a. With only one service water pump OPERABLE, restore an additional service water pump to OPERABLE status within 12 hours or immediately suspend all operations involving an increase in the reactor decay heat load or a reduction in boron concentration of the Reactor Coolant System.

b. With no service water pumps OPERABLE, immediately suspend all operations involving an increase in the reactor decay heat load or a reduction in boron concentration of the Reactor Coolant System.

R.1

SURVEILLANCE REQUIREMENTS

4.7.4.2 At least one service water loop shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. At least once per 6 months by measurement of the movement of the pump house and wing walls.

c. Each service water pump will be tested in accordance with Specification 4.0.5.

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ITS 3.7.9

A.1

ITS

PLANT SYSTEMS

3/4.7.5 ULTIMATE HEAT SINK

LIMITING CONDITION FOR OPERATION

3.7.9

3.7.5.1 The ultimate heat sinks shall be OPERABLE:

a. Service Water Reservoir with:

verify

SR 3.7.9.1 1. A minimum water level at or above elevation 313 Mean Sea Level, ~~USGS datum,~~ and

SR 3.7.9.2 2. An average water temperature of ≤ 95°F ~~as measured at the service water pump outlet.~~ A.2 LA.2

b. The North Anna Reservoir with:

1. A minimum water level at or above elevation 244 Mean Sea Level, USGS datum, and

2. An average water temperature of ≤ 95°F as measured at the condenser inlet.

See CTS 3.7.5.1

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Action A With the requirements of the above specification not satisfied, be in at least HOT STANDBY within 6 hours and in COLD SHTUDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

SR 3.7.9.1
SR 3.7.9.2 4.7.5.1 The ultimate heat sinks shall be determined OPERABLE at least once per 24 hours by verifying the average water temperature and water level to be within their limits. A.2

~~4.7.5.2 Data for calculating the leakage from the service water reservoir shall be obtained and recorded at least once per 6 months.~~ LA.1

CTS 3.7.5.1

PLANT SYSTEMS

3/4.7.5 ULTIMATE HEAT SINK

LIMITING CONDITION FOR OPERATION

R.1

3.7.5.1 The ultimate heat sinks shall be OPERABLE:

a. Service Water Reservoir with:

1. A minimum water level at or above elevation 313 Mean Sea Level, USGS datum, and

2. An average water temperature of ≤ 95°F as measured at the service water pump outlet.

See ITS 3.7.9

b. The North Anna Reservoir with:

1. A minimum water level at or above elevation 244 Mean Sea Level, USGS datum, and

2. An average water temperature of ≤ 95°F as measured at the condenser inlet.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the requirements of the above specification not satisfied, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

R.1

SURVEILLANCE REQUIRMENTS

4.7.5.1 The ultimate heat sinks shall be determined OPERABLE at least once per 24 hours by verifying the average water temperature and water level to be within their limits.

4.7.5.2 Data for calculating the leakage from the service water reservoir shall be obtained and recorded at least once per 6 months.

See ITS 3.7.9

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CTS 3.7.6.1
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R.1

PLANT SYSTEMS

3/4.7.6 FLOOD PROTECTION

LIMITING CONDITION FOR OPERATION

3.7.6.1 Flood protection shall be provided for all safety related systems, components and structures when the water level of the North Anna Reservoir exceeds 256 feet Mean Sea Level USGS datum, at the main reservoir spillway.

APPLICABILITY: At all times

ACTION:

A. With the water level at the main reservoir spillway above elevation 252 feet Mean Sea Level USGS datum, close the sluice gate on the east end of the drain pipe through the flood protection dyke within 4 hours.

B. With the water level at the main reservoir spillway above elevation 256 feet Mean Sea Level USGS Datum:

1. Be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours, and
2. Initiate and complete within 36 hours, the following flood protection measures:
   a) Stop the circulating water pumps, and
   b) Close the condenser isolation valves.

SURVEILLANCE REQUIREMENTS

4.7.6.1 The water level at the main reservoir spillway shall be determined to be within the limits by:

A. Measurement at least once per 8 hours when the water level is below elevation 251 feet Mean Sea Level USGS datum.

B. Measurement at least once per 2 hours when the water level is equal to or above 251 feet Mean Sea Level USGS datum.

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3.7.10

PLANT SYSTEMS

3/4.7.7 CONTROL ROOM EMERGENCY HABITABILITY SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.7.1 The following control room emergency habitability systems shall be OPERABLE:

Two trains of

a. The emergency ventilation system. b. One MCR/ESGR train on the other unit M.1

b. The bottled air pressurization system. <See ITS 3.7.13>

c. Two air conditioning systems. <See ITS 3.7.11>

APPLICABILITY: MODES 1, 2, 3 and 4. ← INSERT NOTE L.5

ACTION: One required train of M.2

Action A.1 a. With either the emergency ventilation system or the bottled air presurization 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 at least COLD SHUTDOWN within the following 30 hours. <See ITS 3.7.13> L.4

Action C.1

Action C.2

two or more required trains of

Action B.1 b. With both the emergency ventilation system and the bottled air pressurization system inoperable, restore at least one of these systems to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in at least COLD SHUTDOWN within the following 30 hours. <See ITS 3.7.13> M.2

Action C.1

Action C.2

two required trains

c. With one air conditioning system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY wtihin the next 6 hours and in at least COLD SHUTDOWN within the following 30 hours. 10

d. With both air conditioning systems inoperable, restore at least one system to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in at least COLD SHUTDOWN within the following 30 hours.

<See ITS 3.7.11>

Action B.1 due to inoperable MCR/ESGR boundary, restore MCR/ESGR boundary to OPERABLE status, or M.3

← INSERT PROPOSED CONDITION D M.4

PLANT SYSTEMS

ITS

3/4.7.7 CONTROL ROOM EMERGENCY HABITABILITY SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.11

3.7.7.1 The following control room emergency habitability systems shall be OPERABLE:

a. The emergency ventilation system. <See ITS 3.7.10>

b. The bottled air pressurization system. <See ITS 3.7.13>

c. Two air conditioning systems.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION: During movement of recently irradiated fuel assemblies. M.1

a. With either the emergency ventilation system or the bottled air presurization 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 at least COLD SHUTDOWN within the following 30 hours. <See ITS 3.7.10>

b. With both the emergency ventilation system and the bottled air pressurization system inoperable, restore at least one of these systems to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in at least COLD SHUTDOWN within the following 30 hours. <See ITS 3.7.13>

Action A.1
Action B.1
Action B.2

c. With one air conditioning system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY wtihin the next 6 hours and in at least COLD SHUTDOWN within the following 30 hours. 10

30 L.1

Action E.1

d. With both air conditioning systems inoperable, ~~restore at least one system to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in at least COLD SHUTDOWN within the following 30 hours.~~ M.3

enter LCO 3.0.3

Action C.1
Action C.2
Action D.1

INSERT PROPOSED CONDITION C and D M.1

ITS

PLANT SYSTEMS

3/4.7.7 CONTROL ROOM EMERGENCY HABITABILITY SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.13 3.7.7.1 The following control room emergency habitability systems shall be OPERABLE:

a. The emergency ventilation system. ⟨See ITS 3.7.10⟩

Three trains of b. The bottled air pressurization system. (M.1)

c. Two air conditioning systems. ⟨See ITS 3.7.11⟩

APPLICABILITY: MODES 1, 2, 3 and 4. ← INSERT NOTE (L.5)

one required train of

ACTION: During movement of recently irradiated fuel assemblies, (M.4) (M.2)

Action A.1 a. With either the emergency ventilation system or the bottled air presurization 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 at least COLD SHUTDOWN within the following 30 hours. ⟨See ITS 3.7.10⟩

Action D.1
Action D.2 (L.4)

two or more required trains of — in MODE 1, 2, 3, or 4 (M.3) (M.2)

Action C.1 b. With both the emergency ventilation system and the bottled air pressurization system inoperable, restore at least one of two these systems trains to OPERABLE status within 24 hours, or be in at least HOT STANDBY within the next 6 hours and in at least COLD SHUTDOWN within the following 30 hours. ⟨See ITS 3.7.10⟩ (M.2) (L.1)

Action D.1
Action D.2

c. With one air conditioning system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY wtihin the next 6 hours and in at least COLD SHUTDOWN within the following 30 hours. 10

d. With both air conditioning systems inoperable, restore at least one system to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in at least COLD SHUTDOWN within the following 30 hours. ⟨See ITS 3.7.11⟩

Action B.1 Two or more required bottled air system trains inoperable due to inoperable MCR/ESGR boundary in MODE 1, 2, 3, or 4, restore MCR/ESGR boundary to OPERABLE status within 24 hours. (M.3)

← INSERT PROPOSED CONDITION E (M.4)

A.1

ITS 3.7.10

ITS

SURVEILLANCE REQUIREMENTS

4.7.7.1 Each control room emergency ventilation system shall be demonstrated OPERABLE: L.1

SR 3.7.10.1

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating ~~from the control room,~~ flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 hours with the heaters on. LA.1 A.2

INSERT PROPOSED SR 3.7.10.2

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

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of 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 1000 cfm ± 10% (except as shown in Specifications 4.7.7.1e. and f.).

2. Verifying, within 31 days after removal, that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D 3803-1989 at a temperature of 30°C (86°F) and a relative humidity of 70%. See ITS 5.6

3. Verifying a system flow rate of 1000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1975.

c. Within 31 days of completing 720 hours of charcoal adsorber operation, verify that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D 3803-1989 at a temperature of 30°C (86°F) and a relative humidity of 70%.

SR 3.7.10.3
SR 3.7.10.4

d. At least once per 18 months by:

1. Verifying that the pressure drop across the demister filter, HEPA filter and charcoal adsorber is < 4 inches Water Gauge while operating the filter train at a flow rate of 1000 cfm ± 10%. See ITS 5.6

ITS

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.7.7.1 Each control room emergency ventilation system shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 hours with the heaters on.

See ITS 3.7.10

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

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of 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 1000 cfm ± 10% (except as shown in Specifications 4.7.7.1e. and f.).

2. Verifying, within 31 days after removal, that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D 3803-1989 at a temperature of 30°C (86°F) and a relative humidity of 70%.

3. Verifying a system flow rate of 1000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1975.

See ITS 5.0

c. Within 31 days of completing 720 hours of charcoal adsorber operation, verify that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D 3803-1989 at a temperature of 30°C (86°F) and a relative humidity of 70%.

SR 3.7.13.3
SR 3.7.13.4

d. At least once per 18 months by:

1. Verifying that the pressure drop across the demister filter, HEPA filter and charcoal adsorber is < 4 inches Water Gauge while operating the filter train at a flow rate of 1000 cfm ± 10%.

See ITS 5.0

A.1

ITS 5.0

ITS

INSERT →

A.5

A.23

SURVEILLANCE REQUIREMENTS

4.7.7.1 Each control room emergency ventilation system shall be demonstrated OPERABLE:

See ITS 3.7.10

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 hours with the heaters on.

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by: LA.5

5.5.10.a
5.5.10.b

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of 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 1000 cfm ± 10% (except as shown in Specifications 4.7.7.1e and f.).

LA.5

5.5.10.c

2. Verifying, within 31 days after removal, that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D 3803-1989 at a temperature of 30°C (86°F) and a relative humidity of 70%.

5.5.10.a
5.5.10.b

3. **Verifying a system flow rate of 1000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1975.**

5.5.10.c

c. Within 31 days of completing 720 hours of charcoal adsorber operation, verify that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D 3803-1989 at a temperature of 30°C (86°F) and a relative humidity of 70%. LA.5

d. At least once per 18 months by: LA.5

5.5.10.e

1. Verifying that the pressure drop across the demister filter, HEPA filter and charcoal adsorber is < 4 inches Water Gauge while operating the filter train at a flow rate of 1000 cfm ± 10%.

A.1

ITS 3.7.10

ITS

PLANT SYSTEM

each LCO 3.7.10.a MCR/ESGR EVS train actuates

M.5

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.7.10.3 2. Verifying that the normal air supply and exhaust are automatically shutdown on a Safety Injection Actuation Test Signal. LA.2

on an actual or simulated actuation L.2

every 18 months on a STAGGERED TEST BASIS

SR 3.7.10.4 3. Verifying that the system maintains the control room at a positive pressure of ≥ 0.04 inch W. G. relative to the outside atmosphere at a system flow rate of 1000 cfm ± 10%. L.3

each required train

adjacent areas M.7 M.6

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 1000 cfm ± 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that that charcoal adsorbers remove ≥ 99% of a halgenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 1000 cfm ± 10%.

See ITS 5.0

4.7.7.2 The bottled air pressurization system shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that the system contains a minimum of 102 bottles of air (shared with Unit 2) each pressurized to at least 2300 psig.

b. At least once per 18 months by verifying that the system will supply at least 340 cfm of air to maintain the control room at a positive pressure of ≥ 0.05 inch W.G. relative to the outside atmosphere for at least 60 minutes.

See ITS 3.7.13

4.7.7.3 Each control room air-conditioning system shall be demonstrated OPERABLE at least once per 12 hours by verifying that the control room air temperature is ≤ 120°F.

See ITS 3.7.11

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ITS

PLANT SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying that the normal air supply and exhaust are automatically shutdown on a Safety Injection Actuation Test Signal.

3. Verifying that the system maintains the control room at a positive pressure of ≥ 0.04 inch W. G. relative to the outside atmosphere at a system flow rate of 1000 cfm ± 10%.

See ITS 3.7.10

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 1000 cfm ± 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that that charcoal adsorbers remove ≥ 99% of a halgenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 1000 cfm ± 10%.

See ITS 5.0

4.7.7.2 The bottled air pressurization system shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that the system contains a minimum of 102 bottles of air (shared with Unit 2) each pressurized to at least 2300 psig.

b. At least once per 18 months by verifying that the system will supply at least 340 cfm of air to maintain the control room at a positive pressure of ≥ 0.05 inch W.G. relative to the outside atmosphere for at least 60 minutes.

See ITS 3.7.13

SR 3.7.11.1 4.7.7.3 Each control ~~room~~ air-conditioning system ~~shall be demonstrated OPERABLE at least once per 12 hours by~~ verifying that the control ~~room~~ air temperature is ≤ 120°F.

INSERT PROPOSED SR 3.7.11.1

M.2

A.1

ITS 3.7.13

each required MCR/ESGR bottled air system train actuates

M.5

on an actual or simulated actuation

L.2

ITS

SR 3.7.13.3 2. Verifying that ~~the normal air supply and exhaust are~~ automatically ~~shutdown~~ on a ~~Safety Injection Actuation Test~~ Signal. LA.2

3. Verifying that the system maintains the control room at a positive pressure of ≥ 0.04 inch W. G. relative to the outside atmosphere at a system flow rate of 1000 cfm ± 10%. See ITS 3.7.10

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 1000 cfm ± 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that that charcoal adsorbers remove ≥ 99% of a halgenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 1000 cfm ± 10%.

See ITS 5.0

4.7.7.2 The bottled air pressurization system shall be demonstrated OPERABLE:

SR 3.7.13.2 a. At least once per 31 days by verifying that ~~the system contains a minimum of~~ M.6

SR 3.7.13.1 ~~102 bottles of air~~ ~~(shared with Unit 2)~~ each pressurized to at least 2300 psig. LA.3

two required trains

SR 3.7.13.4 b. At least once per 18 months by verifying that ~~the system~~ will supply at least 340 cfm of air to maintain the control room at a positive pressure of ≥ 0.05 inch W.G. relative to the ~~outside atmosphere~~ for at least 60 minutes. M.7

4.7.7.3 Each control room air-conditioning system shall be demonstrated OPERABLE at least once per 12 hours by verifying that the control room air temperature is ≤ 120°F. See ITS 3.7.11

On a STAGGERED TEST BASIS L.3

adjacent areas M.8

each required MCR/ESGR bottled air bank manual valve not locked, sealed, or otherwise secured, and required to be open during accident conditions is open M.6

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PLANT SYSTEM

ITS

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying that the normal air supply and exhaust are automatically shutdown on a Safety Injection Actuation Test Signal.
3. Verifying that the system maintains the control room at a positive pressure of ≥ 0.04 inch W. G. relative to the outside atmosphere at a system flow rate of 1000 cfm ± 10%. See ITS 3.7.10

5.5.10.a e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 1000 cfm ± 10%. LA.5

5.5.10.b f. After each complete or partial replacement of a charcoal adsorber bank by verifying that that charcoal adsorbers remove ≥ 99% of a halgenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 1000 cfm ± 10%. LA.5

4.7.7.2 The bottled air pressurization system shall be demonstrated OPERABLE:

a. **At least once per 31 days by verifying that the system contains a minimum of 102 bottles of air (shared with Unit 2) each pressurized to at least 2300 psig.**

b. **At least once per 18 months by verifying that the system will supply at least 340 cfm of air to maintain the control room at a positive pressure of ≥ 0.05 inch W.G. relative to the outside atmosphere for at least 60 minutes.**

See ITS 3.7.13

4.7.7.3 Each control room air-conditioning system shall be demonstrated OPERABLE at least once per 12 hours by verifying that the control room air temperature is ≤ 120°F.

See ITS 3.7.11

A.1

ITS 3.7.12

ITS

PLANT SYSTEMS

3/4.7.8 SAFEGUARDS AREA VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

ECCS Pump Rooms Exhaust Air Cleanup System (PREACS) trains

M.1

3.7.12

3.7.8.1 Two ~~safeguards area ventilation systems (SAVS)~~ shall be OPERABLE with:

a. one SAVS exhaust fan

b. one auxiliary building HEPA filter and charcoal adsorber assembly (shared with Unit 2)

LA.1

APPLICABILITY: MODES 1, 2, 3 and 4. INSERT PROPOSED LCO NOTE M.2

ACTION: ECCS PREACS train M.1

Action A.1
Action C.1
Action C.2
Action B.1

With one SAVS 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.

SURVEILLANCE REQUIREMENTS INSERT PROPOSED REQUIRED ACTION B.1 M.2

ECCS PREACS train M.1

4.7.8.1 Each ~~SAVS system~~ shall be demonstrated OPERABLE:

a. At least once per 31 days ~~on a STAGGERED TEST BASIS~~ by: L.1

SR 3.7.12.2
SR 3.7.12.1

1. Initiating, ~~from the control room,~~ flow through the auxiliary building HEPA filter and charcoal adsorber assembly and verifying that the SAVS ~~operates for at least 10 hours with the heater on.~~ LA.2

INSERT PROPOSED SR 3.7.12.3

A.2

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

See ITS 5.0

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of 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 6,300 cfm ± 10% (except as shown in Specifications 4.7.8.1e. and f.). 10

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A.1

ITS 5.0

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3/4.7.8 SAFEGUARDS AREA VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.8.1 Two safeguards area ventilation systems (SAVS) shall be OPERABLE with:

a. one SAVS exhaust fan

b. one auxiliary building HEPA filter and charcoal adsorber assembly (shared with Unit 2)

See ITS 3.7.12

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one SAVS 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.

SURVEILLANCE REQUIREMENTS

4.7.8.1 Each SAVS system shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by:

1. Initiating, from the control room, flow through the auxiliary building HEPA filter and charcoal adsorber assembly and verifying that the SAVS operates for at least 10 hours with the heater on.

b. At least once per ~~18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system~~, by: LA.5

1. Verifying that ~~the~~ ECCS cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of 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 ~~6,300 cfm ± 10%~~ nominal accident flow for a single train actuation ~~(except as shown in Specifications 4.7.8.1e. and f.)~~. M.21

5.5.10.a+b

10 LA.5

M.21

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SURVEILLANCE REQUIREMENTS (Cont'd)

2. Verifying, within 31 days after removal, that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than or equal to 5% when tested in accordance with ASTM D 3803-1989 at a temperature of 30°C (86°F) and a relative humidity of 95%.

3. Verifying a system flow rate of 6,300 cfm ± 10% during operation when tested in accordance with ANSI N510-1975.

See ITS 5.0

c. Within 31 days of completing 720 hours of charcoal adsorber operation, verify that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than or equal to 5% when tested in accordance with ASTM D 3803-1989 at a temperature of 30°C (86°F) and a relative humidity of 95%.

d. At least once per 18 months by:

1. Verifying that the pressure drop across the HEPA filter and charcoal adsorber assembly is < 6 inches Water Gauge while operating the ventilation system at a flow rate of 6,300 cfm ± 10%.

See ITS 5.0

SR 3.7.12.4 actual or simulated 2. Verifying that on a Containment Hi-Hi Test Signal, the system automatically diverts its exhaust flow through the auxiliary building HEPA filter and charcoal adsorber assembly. L.2 LA.3

e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 6,300 cfm ± 10%.

f. After each complete or partial replacement of a charcoal adsorber bank by verifying that that charcoal adsorbers remove ≥ 99% of a halgenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at a flow rate of 6,300 cfm ± 10%.

See ITS 5.0

INSERT PROPOSED SR 3.7.12.5 M.2

A.1

Nominal accident flow for a single train actuation is greater than the minimum required cooling flow for ECCS equipment operation, and ≤ 39200 cfm, which is the maximum flow rate providing an acceptable residence time within the charcoal adsorber. M.21

ITS

SURVEILLANCE REQUIREMENTS (Cont'd)

5.5.10.c 2. Verifying, ~~within 31 days after removal,~~ that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than or equal to 5% when tested in accordance with ASTM D 3803-1989 at a temperature of 30°C (86°F) and a relative humidity of ~~95~~ 70%. LA.5 L.33

5.5.10.a 5.5.10.b 3. Verifying ~~a system~~ flow rate ~~of 6,300 cfm ± 10% during operation~~ of one ECCS PREACS train provides greater than the minimum required cooling flow for ECCS equipment when tested in accordance with ANSI N510-1975. M.21

5.5.10.c c. ~~Within 31 days of completing 720 hours of charcoal adsorber operation,~~ verify that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than or equal to 5% when tested in accordance with ASTM D 3803-1989 at a temperature of 30°C (86°F) and a relative humidity of ~~95~~ 70%. LA.5 L.33

d. ~~At least once per 18 months by:~~ LA.5

5.5.10.d 1. Verifying that the ~~pressure drop~~ across the HEPA filter and charcoal adsorber assembly is < ~~6~~ 5 inches Water Gauge while operating the ~~ventilation system~~ ECCS PREACS at a flow rate of ~~6,300 cfm ± 10%.~~ ≤ 39,200 cfm M.21

2. Verifying that on a Containment Hi-Hi Test Signal, the system automatically diverts its exhaust flow through the auxiliary building HEPA filter and charcoal adsorber assembly. See ITS 3.7.12

5.5.10.a e. ~~After each complete or partial replacement of a HEPA filter bank by~~ verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating ~~the system at a flow rate of 6,300 cfm ± 10%~~ LA.5 M.21

5.5.10.b f. ~~After each complete or partial replacement of a charcoal adsorber bank by~~ verifying that that charcoal adsorbers remove ≥ 99% of a halgenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating ~~the system at a flow rate of 6,300 cfm ± 10%~~. LA.5

one ECCS PREACS train at nominal accident flow M.21

CTS 3.7.9.1

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PLANT SYSTEMS

3/4.7.9 RESIDUAL HEAT REMOVAL SYSTEM - (RHR)

OPERATING

LIMITING CONDITION FOR OPERATION

3.7.9.1 Two RHR subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION: With one RHR subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 7 days or be in HOT SHUTDOWN within the next 24 hours.

(R.1)

SURVEILLANCE REQUIREMENTS

4.7.9.1 Each RHR subsystem shall be demonstrated OPERABLE by:

a. Verifying isolation of the RHR system prior to the Reactor Coolant System pressure exceeding 500 psig by closing and de-energizing both remote operated RHR suction isolation valves and locking the associated breakers.

b. At least once per 18 months, during shutdown,

1. Cycling each, remote or automatically operated valve in the subsystem flowpath through one complete cycle of full travel.

2. Verifying that each RHR pump is OPERABLE per Specification 4.0.5.

ITS

None

PLANT SYSTEMS

A.1

RESIDUAL HEAT REMOVAL SYSTEM - (RHR)

SHUTDOWN

LIMITING CONDITION FOR OPERATION

~~3.7.9.2 As a minimum, one RHR subsystem shall be OPERABLE.~~ L.4

~~APPLICABILITY: MODES 4 and 5.~~

ACTION: ~~With no RHR subsystem OPERABLE, immediately restore at least one RHR subsystem to OPERABLE status or maintain the Reactor Coolant System T_{avg} less than 350°F by use of alternate heat removal methods. The provisions of Specification 3.0.3, 3.0.4 and 4.0.4 are not applicable.~~ L.5 A.2

SURVEILLANCE REQUIREMENTS

4.7.9.2 The required RHR subsystem shall be demonstrated OPERABLE by:

a. ~~Verifying isolation of the RHR system prior to the Reactor Coolant System pressure exceeding 500 psig by closing and de-energizing both remote operated RHR suction isolation valves and locking the associated breakers.~~ L.3

b. At least once per 31 days:

1. ~~Cycling each testable, remote or automatically operated valve in the subsystem flowpath through at least one complete cycle, and~~

2. ~~Verifying the correct position of each manual valve in the subsystem flowpath, not locked, sealed or otherwise secured in position, and~~ L.2

3. ~~Verifying the correct position of each remote or automatically operated valve in the subsystem flowpath.~~

c. At least once per 18 months:

1. ~~Cycling each, remote or automatically operated valve in the subsystem flowpath through one complete cycle of full travel.~~ LA.1

2. ~~Verifying that the RHR pump, in the subsystem flowpath, is OPERABLE per Specification 4.0.5.~~ L.1

PLANT SYSTEMS

3/4.7.10 SNUBBERS

LIMITING CONDITIONS FOR OPERATION

3.7.10 All snubbers utilized on safety related systems shall be OPERABLE. For those snubbers utilized on non-safety related systems, each snubber shall be OPERABLE if a failure of that snubber or the failure of the non-safety related system would have an adverse effect on any safety related system.

APPLICABILITY: MODES 1, 2, 3 and 4. (MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES).

ACTION: With one or more snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.10.c on the supported component or declare the supported system inoperable and follow the appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

R.1

4.7.10 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5.

NOTE: As used in this specification, "type of snubber" shall mean snubbers of the same design and manufacturer, irrespective of capacity.

a. Visual Inspection

Snubbers are categorized as accessible or inaccessible during reactor operation. Each of the categories (accessible and inaccessible) may be inspected independently according to the schedule determined by the following table and the visual inspection interval for each type of snubber shall be determined based upon the criteria provided in that table.

SURVEILLANCE REQUIREMENTS (Continued)

4.7.10.a (continued)

SNUBBER VISUAL INSPECTION INTERVAL

	NUMBER OF UNACCEPTABLE SNUBBERS		
Population or Category (Notes 1 and 2)	Column A Extend Interval (Notes 3 and 4)	Column B Repeat Interval (Notes 4 and 6)	Column C Reduce Interval (Notes 5 and 6)
1	0	0	1
80	0	0	2
100	0	1	4
150	0	3	8
200	2	5	13
300	5	12	25
400	8	18	36
500	12	24	48
750	20	40	78
1000 or more	29	56	109

Note 1: The next visual inspection interval for a snubber population or category size shall be determined based upon the previous inspection interval and the number of unacceptable snubbers found during that interval. Snubbers are categorized, based on their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or jointly. However, the licensee must decide upon that categorization and document that decision before any inspection and shall use that decision as the basis for determining the next inspection interval for that category.

Note 2: Interpolation between population or category sizes and the number of unacceptable snubbers is permissible. If the results of the interpolation is a fractional value, round off the results to the next lower integer to establish the applicable number of unacceptable snubbers for each column.

Note 3: If the number of unacceptable snubbers is equal to or less than the number in Column A, the next inspection interval may be twice the previous interval but not greater than 48 months.

R.1

CTS 3.7.10

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.7.10.a (continued)

Note 4: If the number of unacceptable snubbers is equal to or less than the number in Column B but greater than the number in Column A, the next inspection interval shall be the same as the previous interval.

Note 5: If the number of unacceptable snubbers is equal to or greater than the number in Column C, the next inspection interval shall be two-thirds of the previous interval. However, if the number of unacceptable snubbers is less than the number in Column C but greater than the number in Column B, the next interval shall be reduced proportionally by interpolation, that is, the previous interval shall be reduced by a factor that is one-third of the ratio of the difference between the number of unacceptable snubbers found during the previous interval and the number in Column B to the difference in the numbers in Columns B and C.

Note 6: The provisions of Specification 4.0.2 are applicable for all inspection intervals up to and including 48 months.

R.1

b. Visual Inspection Acceptance Criteria

Visual inspections shall verify that (1) the snubber has no visible indications of damage or impaired OPERABILITY, (2) attachments to the foundation or supporting structure are secure, (3) fasteners for the attachment of the snubber to the component and to the snubber anchorage are functional, and (4) in those locations where snubber movement can be manually induced without disconnecting the snubber, that the snubber has freedom of movement and is not frozen up.

Snubbers which appear inoperable as a result of visual inspections shall be classified as unacceptable and may be reclassified acceptable for the purpose of establishing the next visual inspection interval, providing that (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers, irrespective of type, that may be generically susceptible, and (2) the affected snubber shall be functionally tested in the as found condition and determined OPERABLE per Specification 4.7.10.d and 4.7.10.e.

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PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.7.10.b (continued)

All snubbers found connected to an inoperable common hydraulic fluid reservoir shall be counted as unacceptable for determining the next visual inspection interval. A review and evaluation shall be performed and documented to justify continued operation with an unacceptable snubber. If continued operation cannot be justified, the snubber shall be declared inoperable and the ACTION requirements shall be met.

When hydraulic snubbers which have uncovered fluid ports are tested for operability, the test shall be performed by starting with the piston at the as-found setting and extending the piston rod in the tension mode direction. Snubbers which have been determined to be inoperable as a result of unexpected transients, isolated damage, or other random events, and cannot be proven operable by functional testing for the same reasons, shall not be counted in determining the next visual inspection period when the provision in 4.7.10.c that failures are subject to an engineering evaluation of component structural integrity has been met and equipment has been restored to an operable state via repair and/or replacement as necessary.

R.1

c. Functional Tests

At least once per 18 months during shutdown, a representative sample of small bore snubbers which follows the expression 35[1+c/2], where c=2 is the allowable number of small bore snubbers not meeting the acceptance criteria selected by the operator, shall be functionally tested either in-place or in a bench test. For each number of small bore snubbers above "c" which does not meet the functional test acceptance criteria for Specification 4.7.10.d or 4.7.10.e, an additional sample selected according to the expression $35(1+c/2)(2/(c+1))^2(a-c)$ shall be functionally tested, where "a" is a total number of small bore snubbers found inoperable during the functional testing or the representative sample.

Functional testing shall continue according to the expression $b[35(1+c/2)(2/(c+1))^2]$ where "b" is the number of snubbers found inoperable in the previous re-sample, until no additional inoperable snubbers are found within a sample or until all small bore snubbers have been functionally tested.

CTS 3.7.10

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

At least once per 18 months during shutdown, 10% of the large bore snubbers (snubbers greater than 50 kips) shall be functionally tested either in place, in a full snubber bench test, or in a snubber valve block bench test. For each large bore snubber that does not meet the functional test acceptance criteria of Specification 4.7.10.d, an engineering evaluation is required to determine the failure mode. If the failure is determined to be generic, an additional 10% of that type of snubber shall be functionally tested. If the failure is determined to be non-generic, an additional 10% of that type of snubber will be tested during the next functional test period.

The representative sample selected for functional testing shall include the various configurations, operating environments and the range of size and capacity of snubbers. At least 25% of the snubbers in the representative sample shall include snubbers from the following three categories:

1. The first snubber away from each reactor vessel nozzle.
2. Snubbers within 5 feet of heavy equipment (valve, pump, turbine, motor, etc.).
3. Snubbers within 10 feet of the discharge from a safety relief valve.

R.1

Snubbers that are "Especially Difficult to Remove" or in "High Radiation Zones During Shutdown" shall also be included in the representative samples.* Accessible and inaccessible snubbers may be used jointly or separately as the basis for the sampling plan.

In addition to the regular sample, snubbers which failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then both the failed snubber (if it is repaired and installed in another position) and the spare snubber shall be retested. Test results of these snubbers may not be included for the re-sampling.

If any snubber selected for functional testing either fails to lockup or fails to move, i.e., frozen in place, the cause will be evaluated and if caused by manufacturer or design deficiency all snubbers of the same design subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated above for snubbers not meeting the functional test acceptance criteria.

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*Permanent or other exemptions from functional testing for individual snubbers in these categories may be granted by the Commission only if a justifiable basis for exemption is presented and/or snubber life destructive testing was performed to qualify snubber operability for all design conditions at either the completion of their fabrication or at a subsequent date.

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PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

For the snubber(s) found inoperable, an engineering evaluation shall be performed on the components which are supported by the snubber(s). The purpose of this engineering evaluation shall be to determine if the components supported by the snubber(s) were adversely affected by the inoperability of the snubber(s) in order to ensure that the supported component remains capable of meeting the design service.

d. Hydraulic Snubbers Functional Test Acceptance Criteria

The hydraulic snubber functional test shall verify that:

1. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.

2. Snubber bleed, or release rate, where required, is within the specified range in compression or tension. For snubbers specifically required to not displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

e. Mechanical Snubbers Functional Test Acceptance Criteria

The mechanical snubber functional test shall verify that:

1. The force that initiates free movement of the snubber rod in either tension or compression is less than the specified maximum drag force. Drag force shall not have increased more than 50% since the last functional test.

2. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.

3. Snubber release rate, where required, is within the specified range in compression or tension. For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

f. Snubber Service Life Monitoring

A record of the service life of each snubber, the date at which the designated service life commences and the installation and maintenance records on which the designated service life is based shall be maintained as required by Specification 6.10.2.

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SURVEILLANCE REQUIREMENTS (Continued)

At least once per 18 months, the installation and maintenance records for each snubber defined in 3.7.10 shall be reviewed to verify that the indicated service life has not been exceeded or will not be exceeded prior to the next scheduled snubber service life review. If the indicated service life will be exceeded prior to the next scheduled snubber service life review, the snubber service life shall be re-evaluated or the snubber shall be replaced or reconditioned so as to extend its service life beyond the date of the next scheduled service life review. This re-evaluation, replacement or reconditioning shall be indicated in the records.

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PLANT SYSTEMS

3/4.7.11 SEALED SOURCE CONTAMINATION

LIMITING CONDITION FOR OPERATION

3.7.11.1 Each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting material or 5 microcuries of alpha emitting material, shall be free of greater than or equal to 0.005 microcuries of removable contamination.

APPLICABILITY: At all times.

ACTION:

a. Each sealed source with removable contamination in excess of the above limits shall be immediately withdrawn from use and:

   1. Either decontaminated and repaired, or

   2. Disposed of in accordance with Commission Regulations.

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

SURVEILLANCE REQUIREMENTS

4.7.11.1.1 Test Requirements - Each sealed source shall be tested for leakage and/or contamination by:

a. The licensee, or

b. Other persons specifically authorized by the Commission or an Agreement State.

The test method shall have a detection sensitivity of at least 0.005 microcuries per test sample.

4.7.11.1.2 Test Frequencies - Each category of sealed sources (excluding startup sources and fission detectors previously subjected to core flux) shall be tested at the frequency described below.

a. Sources in use - At least once per six months for all sealed sources containing radioactive materials.

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SURVEILLANCE REQUIREMENTS (Continued)

1. With a half-life greater than 30 days (excluding Hydrogen 3), and

2. In any form other than gas.

b. Stored sources not in use - Each sealed source and fission detector shall be tested prior to use or transfer to another licensee unless tested within the previous six months. Sealed sources and fission detectors transferred without a certificate indicating the last test date shall be tested prior to being placed into use.

c. Startup sources and fission detectors - Each sealed startup source and fission detector shall be tested within 31 days prior to being subjected to core flux or installed in the core and following repair or maintenance to the source.

4.7.11.1.3 Reports - A Special Report shall be prepared and submitted to the Commission on an annual basis if sealed source or fission detector leakage tests reveal the presence of ≥ 0.005 microcuries of removable contamination.

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R.1

3/4.7.12 SETTLEMENT OF CLASS 1 STRUCTURES

LIMITING CONDITION FOR OPERATION

3.7.12.1 The total settlement of each Class 1 structure or the differential settlement between Class 1 structures shall not exceed the allowable values of Table 3.7-5.

APPLICABILITY: ALL MODES

ACTION:

a. With either the total settlement of any structure or the differential settlement of any structures exceeding 75 percent of the allowable settlement, conduct an engineering review of field conditions and evaluate the consequences of additional settlement. Submit a special report to the Commission pursuant to Specification 6.9.2 within 60 days, containing the results of the investigation, the evaluation of existing and possible continued settlement and the remedial action to be taken if any, including the date of the next survey.

b. With the total settlement of any structure or the differential settlement of any two structures exceeding the allowable settlement value of Table 3.7-5, be in at least HOT STANDBY within 6 hours and COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.12.1 The total settlement of each Class 1 structure or the differential settlement between Class 1 structures listed in Table 3.7-5 shall be determined by measurement and calculation at least once per 6 months. The accuracy of the measurements shall be in accordance with second-order Class II accuracy as defined by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Survey, 1974.

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TABLE 3.7-5

ALLOWABLE TOTAL SETTLEMENT OR DIFFERENTIAL SETTLEMENT FOR CLASS 1 STRUCTURES

ITEM NO.	SETTLEMENT POINT	STRUCTURE	SETTLEMENT POINT	STRUCTURE/COMPONENT	ALLOWABLE TOTAL SETTLEMENT (FEET)	ALLOWABLE DIFFERENTIAL SETTLEMENT (FEET)
1	7 or 10	Service Water Pump House	17, 18	North Side of Expansion Joint Service Water Piping at SWPH	N/A	0.220 from 7/77
2	117	*Service Building (E-14)	113	Unit 2 Main Steam Valve House	N/A	0.047 from 7/77
3	17, 18	North Side of Expansion Joint Service Water Piping at SWPH			0.660 from 8/78	N/A
4	114	Service Building (E-17)			0.146 from 5/76	N/A
5	25, 26, 27, 28	Service Water Valve House			0.320 from 4/87	N/A
6	29, 30 31, 32	Service Water Tie-in Vault			0.120 from 4/87	N/A

* Critical differential settlement is downward movement of Point 117 with respect to Point 113.

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PLANT SYSTEMS

3/4.7.13 GROUNDWATER LEVEL – SERVICE WATER RESERVOIR

LIMITING CONDITION FOR OPERATION

3.7.13 The groundwater level of the service water reservoir (shared by Units 1 and 2) shall not exceed the elevation at the locations listed in Table 3.7-6. The flow of groundwater from the drains beneath the pumphouse shall not exceed the values given in Table 3.7-6.

APPLICABILITY: ALL MODES.

ACTION:

a. With the groundwater level of the service water reservoir or the groundwater flow rate exceeding any of the limits of Table 3.7-6, an engineering evaluation shall be performed by a Licensed Civil Engineer to determine the cause of the high ground water or flow rates and the influence on the stability of the service water reservoir and pumphouse. A Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 90 days, containing the results of the evaluation and any corrective action determined to be necessary.

b. With the inability to obtain at least one measurement from each of the locations listed in SR 4.7.13.1, an engineering evaluation shall be performed by a Licensed Civil Engineer to determine the consequences of not meeting SR 4.7.13.1. A Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 90 days, containing the results of the evaluation and any corrective action determined to be necessary. R.1

c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.13.1 At least once per six months verify the groundwater level within the dike of the service water reservoir does not exceed the value established in Table 3.7-6. The groundwater level shall be determined by measurement from each zone. At a minimum, at least one measurement shall be made at each zone listed below and the measurement shall be within the limits presented in Table 3.7-6:

Zone 1 - service water pump house (Device Nos. 11, 14, or 20)

Zone 2 - southeast end of the reservoir (Device Nos. 10, 15, 21, or 22)

Zone 3 - service water valve house (Device Nos. 18 or 19)

4.7.13.2 At least once per six months verify that the groundwater flow rate does not exceed the value established in Table 3.7-6. The groundwater flow rate shall be determined by measurements at the drain outlet gallery. A visual inspection of the clarity of the outflow from each drain shall be performed in conjunction with the flow monitoring effort.

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TABLE 3.7-6

SERVICE WATER RESERVOIR - ALLOWABLE GROUNDWATER LEVELS

ZONE	MEASUREMENT LOCATION	ALLOWABLE GROUNDWATER ELEVATION (Mean Sea Level in feet)
1. Service Water Pump House [Units 1 & 2]	Crest (Device Nos. 11, 14, or 20)	280
2. Southeast corner of the SW Reservoir	a. Crest (Device Nos. 15, 21 or 22)	295
	b. Toe (Device No. 10)	280
3. Service Water Valve House [Units 1 & 2]	Crest (Device No. 18 or 19)	295

R.1

SERVICE WATER RESERVOIR - ALLOWABLE DRAIN FLOW RATE

DRAIN OUTLETS	LOCATION	FLOW RATE
1 through 6	Drainage Gallery	Total Flow Rates shall not exceed 8.5 gallons per minute

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ITS 3.8.1

3.8 3/4.8 ELECTRICAL POWER SYSTEMS

A.1

3.8.1 3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

LCO 3.8.1 3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

a a. Two ~~physically independent~~ qualified circuits between the offsite transmission network and the onsite Class 1E distribution system, and LA.8

b b. Two ~~separate and independent~~ emergency diesel generators (EDGs): INSERT LCO requirements LA.8

1. ~~Each with a separate day tank containing a minimum of 450 gallons of fuel, and~~ A.22

2. A fuel storage system consisting of two underground storage tanks each containing a minimum of 45,000 gallons of fuel (This is a shared system with Unit 2), and See ITS SR 3.8.1.4

see ITS 3.8.3

3. A separate fuel transfer system. L.1

c, d Insert proposed ITS LCO C and d

APPLICABILITY: MODES 1, 2, 3 and 4 A.9

ACTION:

Action A a. **With one offsite circuit of 3.8.1.1.a inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter.** INSERT PROPOSED Required Action A.2 **Restore the offsite circuit to OPERABLE status within 72 hours** INSERT proposed 2nd Completion Time of A.3 **or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.** L.1

Action L

Action B b. (**Risk-Informed**) With one EDG of 3.8.1.1.b inoperable, demonstrate the OPERABILITY of the offsite A.C. power sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. ~~If the EDG is inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing,~~ INSERT PROPOSED Required Action B.2 demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement ~~4.8.1.1.2.a.4~~ 3.8.1.2 within 24 hours~~*~~, unless the absence of any potential common ~~mode~~ cause failure for the remaining EDG is demonstrated. Restore the EDG to OPERABLE status within 14 days if the AAC DG and the opposite unit's EDGs are OPERABLE or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. In addition: M.1 L.2 L.3 L.14 M.1

Action C

Action L

Insert proposed Required Action B.4

~~* This action is required to be completed regardless of when the inoperable EDG is restored to OPERABILITY.~~ L.3

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3/4.8 ELECTRICAL POWER SYSTEMS A.1

3/4.8.1 ~~A.C. SOURCES~~ Diesel Fuel oil and Starting Air A.2

~~OPERATING~~

LIMITING CONDITION FOR OPERATION

LCO 3.8.3

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE: <see ITS LCO 3.8.1>

a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and M.1

b. Two separate and independent emergency diesel generators (EDGs): INSERT proposed LCO 3.8.3 A.2

1. Each with a separate day tank containing a minimum of 450 gallons of fuel, and <see ITS LCO 3.8.1>

2. A fuel storage system ~~consisting of two underground storage tanks each containing a minimum of~~ 45,000 gallons of fuel (~~This is a shared system with Unit 2)~~, ~~and~~ LA.1 <see ITS SR 3.8.3.1>

3. ~~A separate fuel transfer system.~~ M.1

APPLICABILITY: ~~MODES 1, 2, 3 and 4~~ INSERT PROPOSED APPLICABILITY A.2

ACTION: INSERT PROPOSED Action NOTE A.3

a. With one offsite circuit of 3.8.1.1.a inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

b. **(Risk-Informed)** With one EDG of 3.8.1.1.b inoperable, demonstrate the OPERABILITY of the offsite A.C. power sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. If the EDG is inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours*, unless the absence of any potential common mode failure for the remaining EDG is demonstrated. Restore the EDG to OPERABLE status within 14 days if the AAC DG and the opposite unit's EDGs are OPERABLE or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. In addition: <see ITS 3.8.1>

* This action is required to be completed regardless of when the inoperable EDG is restored to OPERABILITY.

ITS

Action C

Action L

Action C

Action L

Action H

Action L

Action G

A.1

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION

ACTION: (Continued)

1. If one or more of the three diesel generators (i.e., AAC DG or opposite unit's EDGs) required for entry into the 14 day action statement is(are) inoperable at the start of the 14 day action statement, restore the diesel generator(s) to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the next following 30 hours. A.3
2. If one or more of the three diesel generators (i.e., AAC DG or opposite unit's EDGs) required for entry into the 14 day action statement become(s) inoperable during the 14 day action statement, restore the diesel generator(s) to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the next following 30 hours. A.3

INSERT PROPOSED NOTE for Required Action H A.4

c. ~~With one offsite circuit and one EDG inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; and if the EDG became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours*, unless the absence of any potential common mode failure for the remaining EDG is demonstrated.~~ A.5 Restore 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 the other A.C. power source (offsite circuit or EDG) to OPERABLE status in accordance with the provisions of Section 3.8.1.1 Action Statement a or b. as appropriate with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable A.C. power source.~~ A.5 L.4

Insert proposed Required Action G.1

d. With two of the required offsite A.C. circuits inoperable, restore one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. ~~Following restoration of one offsite source, follow Action Statement a with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable offsite A.C. circuit.~~ A.6

~~* This action is required to be completed regardless of when the inoperable EDG is restored to OPERABILITY.~~ A.5

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A.1

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ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION

ACTION: (Continued):

Action I | Action L

e. With two of the above required EDGs inoperable, ~~demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter;~~ restore one of the inoperable EDGs 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. ~~Following restoration of one EDG, follow Action Statement b with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable EDG.~~ A.7 A.7

f. With one underground fuel oil storage tank of 3.8.1.1.b.2 inoperable for the performance of Surveillance Requirement 4.8.1.1.4 or for tank repairs:

1. Verify 45,000 gallons of fuel is available in the operable underground fuel oil storage tank at least once per 12 hours,
2. Verify a minimum of 100,000 gallons of fuel is maintained in the above ground main fuel oil storage tank at least once per 12 hours,
3. Verify an available source of fuel oil and transportation to supply 50,000 gallons of fuel in less than a 48 hour period, and
4. Restore the storage tank to OPERABLE status within 7 days or place both Units in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

See ITS 3.8.3

Action K — INSERT PROPOSED Action K — L.12

Action M — INSERT PROPOSED Action M — A.8

Actions D, E, F — INSERT PROPOSED Actions D, E, F — A.19 L.11

Action J — INSERT PROPOSED Action J — A.2

A.1

ITS

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION

ACTION: (Continued):

e. With two of the above required EDGs inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter: restore one of the inoperable EDGs 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. Following restoration of one EDG, follow Action Statement b with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable EDG. See ITS 3.8.1

Action A — f. With one underground fuel oil storage tank of 3.8.1.1.b.2 inoperable for the performance of Surveillance Requirement 4.8.1.1.4 or for tank repairs: or inspection — LA.1 L.2

A.2 — 1. Verify 45,000 gallons of fuel is available in the operable underground fuel oil storage tank at least once per 12 hours. LA.1

A.3 — 2. Verify a minimum of 100,000 gallons of fuel is maintained in the above ground main fuel oil storage tank at least once per 12 hours.

A.1 — 3. Verify an available source of fuel oil ~~and transportation~~ to supply ~~50,000~~ gallons ~~of fuel in less than a 48 hour period, and~~ LA.2

A.4, Action B — 4. Restore the storage tank to OPERABLE status within 7 days or place both Units in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

Action C — INSERT PROPOSED ACTION C — L.1

Action D — INSERT PROPOSED ACTION D — M.2

Action E — INSERT PROPOSED ACTION E — L.3, M.1

Action F — INSERT PROPOSED ACTION F

Action G — INSERT PROPOSED ACTION G — A.4

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ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

ITS

4.8.1.1.1 Each of the above required physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

SR 3.8.1.1 a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignment indicating power availability.

Insert proposed Note

3.8.1.8 b. Demonstrated OPERABLE at least once per 18 months during shutdown by manually transferring the onsite Class 1E power supply from the normal circuit to the alternate circuit. L.10

4.8.1.1.2 Each emergency diesel generator (EDG) shall be demonstrated OPERABLE: every 31 days L.5

a. ~~In accordance with the frequency specified in Table 4.8.2 on a STAGGERED TEST BASIS by:~~

SR 3.8.1.4 1. Verifying the fuel level in the day tank. contains 450 gallons <FROM LCO 3.8.1.1 b.1>

2. Verifying the fuel level in the fuel storage tank. <see ITS 3.8.3>

SR 3.8.1.6 3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank. every 92 days L.16 A.10

Insert proposed Notes to SR 3.8.1.2

SR 3.8.1.2 SR 3.8.1.3 4. Verifying the EDG can start~~**~~ and gradually accelerate to a steady state voltage and frequency of 4160 ± 420 volts and 60 ± 0.5 Hz. Subsequently, verifying the generator is synchronized, gradually loaded** to an indicated 2500-2600 kw~~***~~ and operates for at least 60 minutes. INSERT Proposed Notes to SR 3.8.1.3 A.11 M.6

5. ~~Verifying the EDG is aligned to provide standby power to the associated emergency busses.~~ LA.2

b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank is within the acceptable limits specified in Table 1 of ASTM D975-74 when checked for viscosity, water and sediment. <See ITS 3.8.3>

SR 3.8.1.5 >INSERT PROPOSED SR 3.8.1.5 M.2

** ~~This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading recommendations.~~ A.10

*** ~~This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.~~ A.11

ITS

A.1

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignment indicating power availability.

b. Demonstrated OPERABLE at least once per 18 months during shutdown by manually transferring the onsite Class 1E power supply from the normal circuit to the alternate circuit.

See ITS 3.8.1

4.8.1.1.2 Each emergency diesel generator (EDG) shall be demonstrated OPERABLE:

a. In accordance with the frequency specified in Table 4.8.2 on a STAGGERED TEST BASIS by:

From CTS LCO 3.8.1.1 b.2

1. Verifying the fuel level in the day tank.

SR 3.8.3.1 2. Verifying the fuel level in the fuel storage tank 45,000 gallons every 31 days A.5

3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank.

4. Verifying the EDG can start** and gradually accelerate to a steady state voltage and frequency of 4160 ± 420 volts and 60 ± 0.5 Hz. Subsequently, verifying the generator is synchronized, gradually loaded** to an indicated 2500-2600 kw*** and operates for at least 60 minutes.

5. Verifying the EDG is aligned to provide standby power to the associated emergency busses.

See ITS 3.8.1

SR 3.8.3.4 b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank is within the acceptable limits ~~specified in Table 1 of ASTM D975-74~~ LA.3 ~~when checked for viscosity~~, water and sediment. and removal of accumulated water M.3

SR 3.8.3.2 INSERT PROPOSED SR 3.8.3.2 M.2

SR 3.8.3.3 INSERT PROPOSED SR 3.8.3.3 M.1

** This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading recommendations.

*** This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.

See ITS 3.8.1

A.1

ITS

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

SR 3.8.1.7

4.8.1.1.2 (Continued)

INSERT PROPOSED Note to SR 3.8.1.7

A.12

c. At least once per 184 days, the EDG shall be started~~#~~ in less than or equal to 10 seconds after the start signal and achieve voltage greater than or equal to 3960 volts and frequency greater than or equal to 59.5 Hz. The generator steady state voltage and frequency shall be 4160 ± 420 volts and 60 ± 0.5 Hz. ~~The EDG shall be manually synchronized to its appropriate emergency bus, gradually loaded** to an indicated 2500 to 2600 kw***, and operated for at least 60 minutes.~~ A.13 ~~The EDG shall be started for this test by using one of the following signals on a rotating test basis:~~

~~a) Simulated loss of offsite power by itself.~~

~~b) Simulated loss of offsite power in conjunction with an ESF actuation test signal.~~

~~c) An ESF actuation test signal by itself.~~

~~This test, if it is performed so it coincides with the testing required by Surveillance Requirement 4.8.1.1.2.a.4, may also serve to concurrently meet those requirements as well.~~

L.17

A.14
L.10
M.7

d. At least once per 18 months ~~during shutdown~~ by:

Insert proposed Notes

SR 3.8.1.9

1. Verifying, on rejection of a load of greater than or equal to 610 kw, the frequency remains less than or equal to 66 Hz, and within 3 seconds, the voltage and frequency are 4160 ± 420 volts and 60 ± 0.5 Hz. L.15

single largest post ACCIDENT LOAD

LA.9

A.14

SR 3.8.1.16

2. Verifying that the load sequencing timers are OPERABLE with times within the tolerances ~~shown in Table 4.8-1~~. design

LA.4

** ~~This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading recommendations.~~ A.12

*** ~~This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.~~ A.13

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A.1

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

ITS

L.15 A.12 A.14

4.8.1.1.2 (Continued) INSERT PROPOSED NOTES

SR 3.8.1.10

3. Simulating a loss of offsite power by itself, and: Verify on an actuator L.6

a. Verifying de-energization of the emergency busses and load shedding from the emergency busses.

b. Verifying the EDG starts(**) on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected shutdown loads through the sequencing timers and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization of these loads, the steady state voltage and frequency shall be maintained at 4160 ± 420 volts and 60 ± 0.5 Hz. L.15 A.12 L.9 A.12

SR 3.8.1.11

INSERT PROPOSED NOTES

4. Verifying that on an ~~ESF actuation test~~ signal (without loss of offsite power) the EDG starts(**) on the auto-start signal and achieves voltage greater than or equal to 3960 volts and frequency greater than or equal to 59.5 Hz within 10 seconds and operates on standby for greater than or equal to 5 minutes with a steady state voltage of 4160 ± 420 volts and a steady state frequency of 60 ± 0.5 Hz. actuator simulated A.12 L.6 M.4 L.15

INSERT PROPOSED Part D&E

SR 3.8.1.17

INSERT PROPOSED NOTES

5. Simulating a loss of offsite power in conjunction with an ESF actuation test signal, and Verify an actuator A.12 A.14 L.6

a. Verifying de-energization of the emergency busses and load shedding from the emergency busses.

b. Verifying the EDG starts(**) on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected emergency (accident) loads through the sequencing timers and operates for greater than or equal to 5 minutes and maintains the steady state voltage and frequency at 4160 ± 420 volts and 60 ± 0.5 Hz. A.12 L.6 L.10

actual or simulated automatic start

SR 3.8.1.12

c. Verifying that all EDG trips, except engine overspeed, generator differential ~~and breaker overcurrent~~ are automatically bypassed upon ~~loss of voltage on the emergency bus~~ and/or a ~~safety injection actuation~~ signal. A.18 L.7 A.15 A.20 LA.1

SR 3.8.1.13

INSERT PROPOSED NOTES A.12 M.8

6. Verifying the EDG operates(**) for at least 24 hours. During the first 2 hours of this test, the EDG shall be loaded to an indicated target value of 2950 kw (between 2900-3000 kw)(***) and during the remaining 22 hours of this test, the EDG shall be loaded to an indicated 2500-2600 kw(***). L.10 A.15

** ~~This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading recommendations.~~ A.12

*** ~~This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test.~~ A.15

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ELECTRICAL POWER SYSTEMS

ITS

SURVEILLANCE REQUIREMENTS

4.8.1.1.2 (Continued)

7. Verifying that the auto-connected loads to each EDG do not exceed the 2000 hour rating of 3000 kw. L.13

SR 3.8.1.15

8. Verifying the EDG's capability to: INSERT PROPOSED NOTE L.15 A.14
   a) Synchronize with the offsite power source while the EDG is loaded with its emergency loads upon a simulated restoration of offsite power,
   b) Transfer its loads to the offsite power source, and
   c) ~~Proceed through its shutdown sequence.~~ returns to ready-to-load operation M.3

9. Verifying that the following EDG lockout features prevent EDG starting only when required: LA.6
   a) Remote Local Selection Switch
   b) Emergency Stop Switch

SR 3.8.1.14

10. Verifying the EDG's hot restart capability by: INSERT PROPOSED NOTES A.12 A.16
    a) Operating the EDG** loaded to an indicated 2500 to 2600 kw*** for 2 hours or until operating temperatures have stabilized, and A.12 A.16
    b) Within 5 minutes of shutdown verify the EDG can be started** in less than or equal to 10 seconds of the start signal with voltage greater than or equal to 3960 volts and frequency greater than or equal to 59.5 Hz. The generator steady state voltage and frequency shall be 4160 ± 420 volts and 60 ± 0.5 Hz.

SR 3.8.1.18

e. At least once per 10 years or after any modifications which could affect EDG interdependence by starting** both EDGs simultaneously during shutdown, and verifying that both EDGs start in less than or equal to 10 seconds of the start signal and achieve a voltage of greater than or equal to 3960 volts and a frequency of greater than or equal to 59.5 Hz. L.8 A.12 L.10 M.5

Insert steady state limit requirements

f. At least once per 24 months during any mode of operation, by subjecting each EDG to a preventive maintenance inspection in accordance with maintenance procedures appropriate for diesels used for this class of standby service. LA 7

** This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading recommendations. A.12

*** This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate the test. A.16

ITS

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

A.4

LCO 3.8.4 CONDITION C

INSERT LCO AND CONDITION

4.8.1.1.3 ~~Each emergency diesel generator~~ 125-volt battery bank ~~and charger~~ shall be demonstrated OPERABLE: LA.3

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

1. The parameters in Table 4.8-3 meet Category A limits and <see ITS 3.8.6>

SR 3.8.4.1

2. The total battery terminal voltage is greater than or equal to 129 volts on a float charge.

b. At least once per 92 days ~~and within 7 days after a battery discharge where the battery terminal voltage decreased below 110 volts or battery overcharge above 150 volts~~ by verifying that: L.2

1. The parameters in Table 4.8-3 meet Category B limits and <see ITS 3.8.6>

SR 3.8.4.2

2. There is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than 150 x 10 to the minus 6 ohms.

c. At least once per 18 months, by verifying that:

SR 3.8.4.3

1. The cells, cell plates and battery racks show no visual indication of physical ~~damage or abnormal deterioration~~ that could degrade battery performance A.2

SR 3.8.4.4

2. Remove visible corrosion ~~The cell-to-cell and terminal~~ connections are clean, tight and coated with anti-corrosion material. M.2

SR 3.8.4.5

3. The resistance of each cell-to-cell and terminal connection is less than or equal to 150×10^{-6} ohms.

SR 3.8.4.7

4. The battery charger will supply at least 10 amperes at 125 volts for at least 4 hours.

SR 3.8.4.9

Note

d. ~~At least once~~ per 60 months, ~~during shutdown~~, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test or modified performance test. L.3 A.3 L.1

SR 3.8.4.9

e. At least once per 18 months, ~~during shutdown~~, perform a performance discharge test of battery capacity if the battery shows signs of degradation or has reached 85% of its service life expected for the application. ~~Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average from previous performance discharge tests, or is below 90% of the manufacturer's rating.~~ L.3 A.3 LA.2

ITS 3.8.6

A.1

ITS

SURVEILLANCE REQUIREMENTS

4.8.1.1.3 Each emergency diesel generator 125-volt battery bank and charger shall be demonstrated OPERABLE: See ITS 3.8.4

SR 3.8.6.1

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

1. The parameters in Table 4.8-3 meet Category A limits and

2. The total battery terminal voltage is ~~greater than or equal to~~ 129 volts on a float charge. See ITS 3.8.4

SR 3.8.6.2 Frequencies

SR 3.8.6.2

b. At least once per 92 days and within ~~7 days~~ 24 hours after a battery discharge where the battery terminal voltage decreased below 110 volts or battery overcharge above 150 volts, by verifying that: M.2

1. The parameters in Table 4.8-3 meet Category B limits and

2. There is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than 150 x 10 to the minus 6 ohms. See ITS 3.8.4

c. At least once per 18 months, by verifying that:

1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration.

2. The cell-to-cell and terminal connections are clean, tight and coated with anti-corrosion material.

3. The resistance of each cell-to-cell and terminal connection is less than or equal to 150 x 10^{-6} ohms.

4. The battery charger will supply at least 10 amperes at 125 volts for at least 4 hours.

d. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. See ITS 3.8.4

e. At least once per 18 months, during shutdown, perform a performance discharge test of battery capacity if the battery shows signs of degradation or has reached 85% of its service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average from previous performance discharge tests, or is below 90% of the manufacturer's rating.

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3-27-87 ITS 3.8.1

TABLE 4.8-1

LIST OF LOAD SEQUENCING TIMERS AND DESIGN SETPOINTS
"H" BUS

TIMER IDENTIFICATION	SET POINT (SECONDS)	INITIATING SIGNAL (1)	TOLERANCE (SECONDS)
1FWEA01-62	20	SI	±1.00
1FWEA01-62A	25	LOP	±1.25
1SWEA03-62	10	LOP	±0.50
1RSOA01-62B	35	LOP	±1.75
1RSOA01-62A	210	CDA	±21.0
1CCPA01-62Y	15	LOP	±0.75
1CCPA01-62X	20	LOP	±1.00
1RSIA01-62A	20	LOP	±1.00
1RSIA01-62	195	CDA	±9.75
1QSSA01-62A	15	LOP	±0.75
1HVRA03-62	30	LOP	±1.50
1HVRA04-62	10	LOP	±0.50
1HVRB04-62	10	LOP	±0.50
1PGSA02-62A	10	(2)	±0.50
1ENSH06-62A	15	LOP	±0.75
1HVRC04-62	10	LOP	±0.50
1SWSA35-62A1A	15	SI	±1.50
1SWSA35-62B1A	15	SI	±1.50

LA.4

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TABLE 4.8-1 (Continued)

LIST OF LOAD SEQUENCING TIMERS AND DESIGN SETPOINTS
"J" BUS

TIMER IDENTIFICATION	SET POINT (SECONDS)	INITIATING SIGNAL(1)	TOLERANCE (SECONDS)
1FWEB01-62	20	SI	±1.00
1FWEB01-62A	25	LOP	±1.25
1SWEB03-62	10	LOP	±0.50
1RSOB01-62B	35	LOP	±1.75
1RSOB01-62A	210	CDA	±21.0
1CCPB01-62Y	15	LOP	±0.75
1CCPB01-62X	20	LOP	±1.00
1RSIB01-62A	20	LOP	±1.00
1RSIB01-62	195	CDA	±9.75
1QSSB01-62A	15	LOP	±0.75
1HVRB03-62	30	LOP	±1.50
1HVRD04-62	10	LOP	±0.50
1HVRE04-62	10	LOP	±0.50
1HVRF04-62	10	LOP	±0.50
1PGSB02-62A	10	(2)	±0.50
1ENSJ06-62A	15	LOP	±0.75
1SWSB35-62A1B	15	SI	±1.50
1SWSB35-62B1B	15	SI	±1.50

(1) SI - Safety Injection
LOP - Loss of Offsite Power
CDA - Containment Depressurization Actuation
(2) Low primary grade water header pressure

LA.4

Table 4.8-2

EMERGENCY DIESEL GENERATOR TEST SCHEDULE

Number of Failures in Last 20 Valid Tests*	Number of Failures in Last 100 Valid Tests*	Test Frequency
≤ 1	≤ 4	Once per 31 days
≥ 2**	≥ 5	Once per 7 days

* Criteria for determining number of failures and number of valid tests shall be in accordance with Regulatory Position C.2.e of Regulatory Guide 1.108, but determined on a per emergency diesel generator basis.

For the purposes of determining required test frequency, the previous test failure count may be reduced to zero if a complete diesel overhaul to like-new conditions is completed, provided that the overhaul including appropriate post-maintenance operation and testing, is specifically approved by the manufacturer and if acceptable reliability has been demonstrated. The reliability criterion shall be the successful completion of 14 consecutive tests in a single series. Ten of these tests shall be in accordance with Surveillance Requirement 4.8.1.1.2.a.4; four tests, in accordance with Surveillance Requirement 4.8.1.1.2.c. If this criterion is not satisfied during the first series of tests, any alternate criterion to be used to transvalue the failure count to zero requires NRC approval.

L.5

** The associated test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

4.8.1.1.4 For each underground EDG fuel oil storage tank perform the following at least once per 10 years: L, 2

1. Drain each fuel oil storage tank
2. Remove sediment from each fuel oil storage tank
3. Inspect each fuel oil storage tank for integrity
4. Clean each fuel oil storage tank.

A.1

ITS 3.8.2
08-26-98

ITS 3.8 3.8.2

ELECTRICAL POWER SYSTEMS

SHUTDOWN AC-Sources

LIMITING CONDITION FOR OPERATION

LCO 3.8.2

3.8.1.2 As a minimum, one of the following trains of A.C. electrical power sources shall be OPERABLE:

a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and

b. One emergency diesel generator with:

SR 3.8.2.1

1. A day tank containing a minimum volume of 450 gallons of fuel:

2. A fuel storage system consisting of two underground storage tanks each containing a minimum volume of 45,000 gallons of fuel (This is a shared system with Unit 2), and

3. A fuel transfer system.

<see ITS 3.8.3>

APPLICABILITY:

a. Modes 5 and 6 L.6

b. During movement of recently irradiated fuel assemblies ~~or loads over irradiated fuel assemblies when no fuel assemblies are in the reactor vessel.~~ L.5

ACTION: INSERT PROPOSED NOTE A.2

INSERT PROPOSED Required Action A.1 L.1

Actions A & B

a. With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes movement of recently irradiated fuel assemblies, ~~and movement of loads over irradiated fuel assemblies~~ until the minimum required A.C. electrical power sources are restored to OPERABLE status. INSERT PROPOSED Required Actions A.2.4 and B.4 L.4 INSERT proposed ITS Required Actions A.2.3 and B.3 L.5 M.1 L.6

b. With one underground fuel oil storage tank of 3.8.1.2.b.2 inoperable for the performance of Surveillance Requirement 4.8.1.1.4 or for tank repairs:

1. Verify 45,000 gallons of fuel is available in the operable underground fuel oil storage tank at least once per 12 hours,

2. Verify a minimum of 100,000 gallons of fuel oil is maintained in the above ground main fuel oil storage tank at least once per 12 hours,

3. Verify an available source of fuel oil and transportation to supply 50,000 gallons of fuel in less than a 48 hour period, and

4. Restore the storage tank to OPERABLE status within 7 days or place both Units in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours, and perform ACTION a. above.

<SEE ITS 3.8.3>

SURVEILLANCE REQUIREMENTS

INSERT PROPOSED NOTES L.2

SR 3.8.2.1

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1, 4.8.1.1.2, 4.8.1.1.3 and 4.8.1.1.4. <See ITS 3.8.3> with the exception of 4.8.1.1.b and 4.8.1.1.2.d and e <See ITS 3.8.3> L.3

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ITS 3.8.3

A.1

ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, one of the following trains of A.C. electrical power sources shall be OPERABLE:

See ITS 3.8.2

a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and

b. One emergency diesel generator with:

1. A day tank containing a minimum volume of 450 gallons of fuel;

2. ~~A fuel storage system consisting of two underground storage tanks each containing a minimum volume of 45,000 gallons of fuel (This is a shared system with Unit 2), and~~

LA.1

see ITS 3.8.3.1

3. ~~A fuel transfer system.~~

APPLICABILITY:

a. Modes 5 and 6

b. During movement of irradiated fuel assemblies or loads over irradiated fuel assemblies when no fuel assemblies are in the reactor vessel.

See ITS 3.8.2

ACTION:

a. With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies, and movement of loads over irradiated fuel assemblies until the minimum required A.C. electrical power sources are restored to OPERABLE status.

Action A

b. With one underground fuel oil storage tank of 3.8.1.2.b.2 inoperable for the performance of Surveillance Requirement 4.8.1.1.4 ~~or for~~ tank repairs: or inspections LA.1 L.2

1. Verify 45,000 gallons of fuel is available in the operable underground fuel oil storage tank at least once per 12 hours, LA.1

2. Verify a minimum of 100,000 gallons of fuel oil is maintained in the above ground main fuel oil storage tank at least once per 12 hours,

3. ~~Verify an available source of fuel oil and transportation to supply 30,000 gallons of fuel in less than a 48 hour period, and~~ LA.2

Action B

4. Restore the storage tank to OPERABLE status within 7 days or place ~~both Units~~ the Unit in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours, and perform ACTION a. above. A.1

SURVEILLANCE REQUIREMENTS

See ITS 3.8.2

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1, 4.8.1.1.2, 4.8.1.1.3, and ~~4.8.1.1.4~~.

see ITS 3.8.5

L.2

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ITS

A.1

ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, one of the following trains of A.C. electrical power sources shall be OPERABLE:

a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and

b. One emergency diesel generator with:

1. A day tank containing a minimum volume of 450 gallons of fuel;
2. A fuel storage system consisting of two underground storage tanks each containing a minimum volume of 45,000 gallons of fuel (This is a shared system with Unit 2), and
3. A fuel transfer system.

See ITS 3.8.2

See ITS 3.8.3

APPLICABILITY:

a. Modes 5 and 6

b. During movement of irradiated fuel assemblies or loads over irradiated fuel assemblies when no fuel assemblies are in the reactor vessel.

ACTION:

a. With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies, and movement of loads over irradiated fuel assemblies until the minimum required A.C. electrical power sources are restored to OPERABLE status.

See ITS 3.8.2

b. With one underground fuel oil storage tank of 3.8.1.2.b.2 inoperable for the performance of Surveillance Requirement 4.8.1.1.4 or for tank repairs:

1. Verify 45,000 gallons of fuel is available in the operable underground fuel oil storage tank at least once per 12 hours,
2. Verify a minimum of 100,000 gallons of fuel oil is maintained in the above ground main fuel oil storage tank at least once per 12 hours,
3. Verify an available source of fuel oil and transportation to supply 50,000 gallons of fuel in less than a 48 hour period, and
4. Restore the storage tank to OPERABLE status within 7 days or place both Units in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours, and perform ACTION a. above.

See ITS 3.8.3

SURVEILLANCE REQUIREMENTS

SR 3.8.5.1

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1, 4.8.1.1.2, 4.8.1.1.3, and 4.8.1.1.4.

See ITS 3.8.2

See ITS 3.8.3

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ITS 3.8.7

A.1

ITS

3.8 ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

3.8.7 Inverters ~~A.C. DISTRIBUTION~~ - OPERATING

LIMITING CONDITION FOR OPERATION

A.2

LCO 3.8.7

3.8.2.1 The ~~following A.C. electrical busses~~ Inverters shall be OPERABLE ~~and energized with tie breakers open between redundant busses:~~

a. ~~H A.C. Emergency Busses consisting of:~~
   1. ~~4160 volt Emergency Bus # 1H~~
   2. ~~480 volt Emergency Busses # 1H, 1H1~~

b. ~~J A.C. Emergency Busses consisting of:~~
   1. ~~4160 volt Emergency Bus # 1J~~
   2. ~~480 volt Emergency Busses # 1J, 1J1~~

<see ITS 3.8.9>

H & J Inverters

c. ~~120 volt A.C. Vital Bus #1-I energized from~~ its associated inverter ~~connected to D.C. Bus # 1-I~~*

d. ~~120 volt A.C. Vital Bus #1-II energized from~~ its associated inverter ~~connected to D.C. Bus # 1-II~~*

e. ~~120 volt A.C. Vital Bus #1-III energized from~~ its associated inverter ~~connected to D.C. Bus # 1-III~~*

f. ~~120 volt A.C. Vital Bus #1-IV energized from~~ its associated inverter ~~connected to D.C. Bus # 1-IV~~*

A.2

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

ACTION:

a. ~~With one of the required A.C. Emergency busses not fully energized, re-energize within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

b. ~~With one A.C. Vital Bus not energized, re-energize the A.C. Vital Bus within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

"See ITS 3.8.9"

inoperable, restore to OPERABLE status

A.3

Action A

c. With one ~~A.C. Vital Bus either not energized from its~~ associated inverter ~~or with the inverter not connected to its associated D.C. Bus, re-energize the A.C. Vital Bus from its associated inverter connected to its associated D.C. Bus~~ within 24 hours or

Action B

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

see ITS 3.8.9

from constant voltage source transformer

M.1

LCO Note Part a Part b

* ~~Two~~ one inverters may be disconnected from their D.C. Busses for up to 24 hours as necessary, for the purpose of performing an equalizing charge on their associated battery banks provided (1) their vital busses are energized and (2) the remaining vital busses are energized from their associated inverters ~~and connected to their associated D.C. Busses.~~

LA.1

A.4

Action A Note

INSERT PROPOSED Note to Required Action A.1

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3.8
3.8.9

ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

A.C. DISTRIBUTION – OPERATING

LIMITING CONDITION FOR OPERATION

A.4 LA.1

LCO 3.8.9 3.8.2.1 The following A.C. electrical busses shall be OPERABLE ~~and energized with tie breakers open between redundant busses~~:

a. H A.C. Emergency Busses consisting of:
   1. 4160 volt Emergency Bus # 1H
   2. 480 volt Emergency Busses # 1H, 1H1

LA.2

b. J A.C. Emergency Busses consisting of:
   1. 4160 volt Emergency Bus # 1J
   2. 480 volt Emergency Busses # 1J, 1J1

See ITS 3.8.7

c. 120 volt A.C. Vital Bus ~~#1-I energized from its associated inverter connected to D.C. Bus # 1-I*~~

d. 120 volt A.C. Vital Bus ~~#1-II energized from its associated inverter connected to D.C. Bus # 1-II~~

LA.2

e. ~~120 volt A.C. Vital Bus #1-III energized from its associated inverter connected to D.C. Bus # 1-III~~

f. 120 volt A.C. Vital Bus ~~#1-IV energized from its associated inverter connected to D.C. Bus # 1-IV*~~

INSERT PROPOSED LCO b. A.5

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

ACTION: LA.1

Action A
Action F

a. With one or more of the required A.C. Emergency busses ~~not fully energized, re-energize~~ inoperable, restore to OPERABLE within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. L.1 LA.1

Action B
Action F

b. With one or more A.C. Vital Bus ~~not energized, re-energize~~ inoperable, restore to OPERABLE the A.C. Vital Bus within 2 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 A.C. Vital Bus either not energized from its associated inverter, or with the inverter not connected to its associated D.C. Bus, re-energize the A.C. Vital Bus from its associated inverter connected to its associated D.C. Bus within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. See 3.8.7

* Two inverters may be disconnected from their D.C. Busses for up to 24 hours as necessary, for the purpose of performing an equalizing charge on their associated battery banks provided (1) their vital busses are energized, and (2) the remaining vital busses are energized from their associated inverters and connected to their associated D.C. Busses.

Action D & E INSERT PROPOSED Action D and E A.5

A.3

Action G INSERT PROPOSED ACTION G M.1

Action A, B, C INSERT 16-hour Completion Time

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ITS

A.1

ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION - OPERATING

SURVEILLANCE REQUIREMENT

SR 3.8.7.1 4.8.2.1 The specified ~~A.C. busses~~ Inverters shall be determined OPERABLE with tie breakers open between redundant busses at least once per 7 days by verifying correct breaker alignment and indicated power availability. M.2

See ITS 3.8.9

ITS 3.8.9

ITS 3.8

A.1

ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION - OPERATING

SURVEILLANCE REQUIREMENT

SR 3.8.9.1 4.8.2.1 The specified A.C. busses shall be determined OPERABLE with tie breakers open between redundant busses at least once per 7 days by verifying correct breaker alignment and indicated power availability. M.2 LA.1

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ITS 3.8.5

A.1

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ITS 3.8

3.8.5

ELECTRICAL POWER SYSTEMS

A.C. and D.C. DISTRIBUTION – SHUTDOWN

See ITS 3.8.7

LIMITING CONDITION FOR OPERATION

See ITS 3.8.10

LCO 3.8.5

3.8.2.2 ~~As a minimum, one of the following trains of A.C. and D.C. busses shall be OPERABLE and energized in the specified manner:~~ INSERT LCO 3.8.5 L.6

a. "H" Train (Orange) consisting of the following:

1. 4160-volt Emergency Bus 1H
2. 480-volt Emergency Busses 1H and 1H1
3. 120-volt A.C. Vital Bus 1-1 energized from its associated inverter connected to D.C. bus 1-1, and
4. 120-volt A.C. Vital Bus 1-2 energized from its associated inverter connected to D.C. bus 1-2.
5. 125-volt D.C. Busses No. 1-1 & 1-2, and
6. 125-volt D.C. Battery Banks 1-I & 1-II and Chargers 1-I & 1-II D.C. Battery Charger 1C-I may be used in place of either of the above Chargers.

LA.1

b. "J" Train (Purple) consisting of the following:

1. 4160-volt Emergency Bus 1J
2. 480-volt Emergency Busses 1J and 1J1
3. 120-volt A.C. Vital Bus 1-3 energized from its associated inverter connected to D.C. bus 1-3, and
4. 120-volt A.C. Vital Bus 1-4 energized from its associated inverter connected to D.C. bus 1-4.
5. 125-volt D.C. Busses No. 1-3 & 1-4, and
6. 125-volt D.C. Battery Banks 1-III & 1-IV and Chargers 1-III & 1-IV D.C. Battery Charger 1C-II may be used in place of either of the above Chargers.

APPLICABILITY: a. Modes 5 and 6 L.5

b. During movement of recently irradiated fuel assemblies ~~or loads over irradiated fuel assemblies when no fuel assemblies are in the reactor vessel.~~ L.1

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A.1

ITS 3.8 ELECTRICAL POWER SYSTEMS

3.8.8 ~~A.C. and D.C. DISTRIBUTION~~ INVERTERS - SHUTDOWN

LIMITING CONDITION FOR OPERATION

LCO 3.8.8 3.8.2.2 ~~As a minimum, one of the following~~ trains of A.C. and D.C. busses ~~shall be OPERABLE and energized in the specified manner~~: INSERT proposed ITS LCO A.2

a. "H" Train (Orange) consisting of the following: see ITS 3.8.10

1. 4160-volt Emergency Bus 1H
2. 480-volt Emergency Busses 1H and 1H1
3. 120-volt A.C. Vital Bus 1-1 energized from its associated inverter connected to D.C. bus 1-1, and
4. 120-volt A.C. Vital Bus 1-2 energized from its associated inverter connected to D.C. bus 1-2. see ITS 3.8.10
5. 125-volt D.C. Busses No. 1-1 & 1-2, and
6. 125-volt D.C. Battery Banks 1-I & 1-II and Chargers 1-I & 1-II D.C. Battery Charger 1C-I may be used in place of either of the above Chargers.

b. "J" Train (Purple) consisting of the following:

1. 4160-volt Emergency Bus 1J
2. 480-volt Emergency Busses 1J and 1J1
3. 120-volt A.C. Vital Bus 1-3 energized from its associated inverter connected to D.C. bus 1-3, and
4. 120-volt A.C. Vital Bus 1-4 energized from its associated inverter connected to D.C. bus 1-4. see ITS 3.8.10
5. 125-volt D.C. Busses No. 1-3 & 1-4, and
6. 125-volt D.C. Battery Banks 1-III & 1-IV and Chargers 1-III & 1-IV D.C. Battery Charger 1C-II may be used in place of either of the above Chargers.

APPLICABILITY: a. Modes 5 and 6 L.4

b. During movement of recently irradiated fuel assemblies ~~or loads over irradiated fuel assemblies when no fuel assemblies are in the reactor vessel~~. L.1

Action A.1 INSERT PROPOSED Required Action A.1 L.2

A.1

ITS 3.8 ELECTRICAL POWER SYSTEMS

SYSTEMS

3.8.10 A.C. and D.C. DISTRIBUTION – SHUTDOWN

LIMITING CONDITION FOR OPERATION

LCO 3.8.10 3.8.2.2 ~~As a minimum, one of the following trains of A.C. and D.C. busses shall be OPERABLE and energized in the specified manner:~~ INSERT PROPOSED LCO 3.8.10 L.5

a. "H" Train (Orange) consisting of the following:

1. 4160-volt Emergency Bus 1H

2. 480-volt Emergency Busses 1H and 1H1 <See ITS 3.8.8>

3. 120-volt A.C. Vital Bus 1-1 energized from its associated inverter connected to D.C. bus 1-1, and

4. 120-volt A.C. Vital Bus 1-2 energized from its associated inverter connected to D.C. bus 1-2. LA.1

5. 125-volt D.C. Busses No. 1-1 & 1-2, and

6. 125-volt D.C. Battery Banks 1-I & 1-II and Chargers 1-I & 1-II D.C. Battery Charger 1C-I may be used in place of either of the above Chargers.

b. "J" Train (Purple) consisting of the following:

1. 4160-volt Emergency Bus 1J

2. 480-volt Emergency Busses 1J and 1J1 <see ITS 3.8.8>

3. 120-volt A.C. Vital Bus 1-3 energized from its associated inverter connected to D.C. bus 1-3, and

4. 120-volt A.C. Vital Bus 1-4 energized from its associated inverter connected to D.C. bus 1-4. LA.1

5. 125-volt D.C. Busses No. 1-3 & 1-4, and

6. 125-volt D.C. Battery Banks 1-III & 1-IV and Chargers 1-III & 1-IV D.C. Battery Charger 1C-II may be used in place of either of the above Chargers.

APPLICABILITY: a. Modes 5 and 6 L.4

b. During movement of recently irradiated fuel assemblies ~~or loads over irradiated fuel assemblies when no fuel assemblies are in the reactor vessel.~~ L.1

Action A.1 INSERT PROPOSED REQUIRED ACTION A.1 L.2

A.1

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ITS ACTION:

<see ITS 3.8.7>

recently L.5

INSERT Proposed Required Action A.2.3 L.3

Action A

With the above required train of A.C. and D.C. electrical equipment and busses not fully OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies, and movement of loads over irradiated fuel assemblies. Initiate corrective action to restore the required train of A.C. and D.C. electrical equipment and busses to OPERABLE status as soon as possible.

L.1

L.2

Action B

INSERT Proposed Required Action A.1.1

INSERT PROPOSED Action B A.2

SURVEILLANCE REQUIREMENTS

4.8.2.2.1 The specified busses shall be determined energized in the required manner once per 7 days by verifying correct breaker alignment and indicated voltage on the busses. <SEE ITS 3.8.10>

SR 3.8.5.1

4.8.2.2.2 NOTE The above required 125-volt battery bank and chargers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

INSERT Proposed Note

L.4

A.1

4-21-92

recently L.4

ITS

ACTION:

Action A.2

inverters

With the above required train of A.C. and D.C. electrical equipment and busses not fully OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of recently irradiated fuel assemblies, ~~and movement of loads over irradiated fuel assemblies~~. Initiate corrective action to restore the required train of A.C. and D.C. electrical equipment and busses to OPERABLE status as soon as possible.

inverter

See ITS 3.8.5 and 3.8.10

L.1

SURVEILLANCE REQUIREMENTS inverters

SR 3.8.8.1 4.8.2.2.1 The specified busses shall be determined energized in the required manner once per 7 days by verifying correct breaker alignment and indicated voltage on the busses.

M.1

4.8.2.2.2 The above required 125-volt battery bank and chargers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

See ITS 3.8.5

suspend operations involving positive reactivity additions that could result in a loss of required SDM or boron concentration

A.1

ITS

ACTION:

Action A.2

With the above required train of A.C. and D.C. electrical equipment and busses not fully OPERABLE recently immediately suspend all operations involving CORE ALTERATIONS, ~~positive reactivity changes~~, movement of irradiated fuel assemblies, ~~and movement of loads over irradiated fuel assemblies~~. Initiate corrective action to restore the required train of A.C. and D.C. electrical equipment and busses to OPERABLE status as soon as possible. L.4 L.1

SURVEILLANCE REQUIREMENTS

SR 3.8.10.1 4.8.2.2.1 ~~The specified busses shall be determined~~ energized ~~in the required manner~~ once per 7 days by verifying correct breaker alignment and indicated voltage ~~on the~~ busses. AC, DC, AC vital M.1

4.8.2.2.2 The above required 125-volt battery bank and chargers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2. See ITS 3.8.5

INSERT PROPOSED Required Action A.2.5 A.2

operations involving positive reactivity additions that could result in a loss of required SDM or boron concentration L.3

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A.1

ITS

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

LCO 3.8.4

3.8.2.3 The following D.C. bus trains shall be energized and OPERABLE with tie breakers between bus trains open: <See ITS 3.8.9>

TRAIN "~~A~~" H ~~consisting of 125-volt D.C. bus No. 1-I and 1-II, 125-volt D.C. battery bank No. 1-I and 1-II and a full capacity charger.~~ LA.1

TRAIN "~~B~~" J ~~consisting of 125-volt D.C. bus No. 1-III and 1-IV, 125-volt D.C. battery bank No. 1-III and 1-IV and a full capacity charger.~~

Insert proposed LCO part c A.5

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Action A and B

a. With one 125-volt D.C. bus inoperable, restore the inoperable bus 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.

b. ~~With one 125-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger 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.~~ LA.3

INSERT PROPOSED Action D A.6

SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability. <SEE ITS 3.8.9>

4.8.2.3.2 Each 125-volt battery ~~bank and charger~~ shall be demonstrated OPERABLE: LA.3

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

1. The parameters in Table 4.8-3 meet Category A limits and <See ITS 3.8.6>

SR 3.8.4.1

2. The total battery terminal voltage is greater than or equal to 129 volts on float charge.

ITS 3.8

A.1

LCO 3.8.6

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

INSERT PROPOSED LCO

A.2

A.4

LIMITING CONDITION FOR OPERATION

<see ITS 3.8.9>

INSERT APPLICABILITY and ACTION NOTE

A.2

3.8.2.3 The following D.C. bus trains shall be energized and OPERABLE with tie breakers between bus trains open:

TRAIN "A" consisting of 125-volt D.C. bus No. 1-I and 1-II, 125-volt D.C. battery bank No. 1-I and 1-II and a full capacity charger.

TRAIN "B" consisting of 125-volt D.C. bus No. 1-III and 1-IV, 125-volt D.C. battery bank No. 1-III and 1-IV and a full capacity charger.

APPLICABILITY: MODES 1, 2, 3 and 4.

<see ITS 3.8.4>

ACTION:

a. With one 125-volt D.C. bus inoperable, restore the inoperable bus 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.

b. With one 125-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger 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.

Action A

INSERT PROPOSED ACTION A

L.1

M.1

SURVEILLANCE REQUIREMENTS

Action B

INSERT PROPOSED ACTION B

A.3

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability.

<See ITS 3.8.9>

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

<see ITS 3.8.4>

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

SR 3.8.6.1

1. The parameters in Table 4.8-3 meet Category A limits and

2. The total battery terminal voltage is greater than or equal to 129 volts on float charge.

<See ITS 3.8.4>

ITS 3.8 3.8.9

A.1

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

LCO 3.8.9 3.8.2.3 The following D.C. bus trains shall be ~~energized and~~ OPERABLE ~~with the breakers between bus trains open.~~ A.4 LA.1

~~TRAIN "A" consisting of 125-volt D.C. bus No. 1-I and 1-II, 125-volt D.C. battery bank No. 1-I and 1-II and a full capacity charger.~~ LA.2

~~TRAIN "B" consisting of 125-volt D.C. bus No. 1-III and 1-IV, 125-volt D.C. battery bank No. 1-III and 1-IV and a full capacity charger.~~

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION: L.1

Action C Action F

a. With one or more 125-volt D.C. bus inoperable, restore the inoperable bus 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.

b. With one 125-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger 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. See ITS 3.8.4

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1 4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE ~~and energized~~ with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability. M.2 LA.1

4.8.2.3.2 Each 125-volt battery bank and charger shall be demonstrated OPERABLE: See ITS 3.8.4

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

1. The parameters in Table 4.8-3 meet Category A limits and

2. The total battery terminal voltage is greater than or equal to 129 volts on float charge. See ITS 3.8.6

A.1

ITS

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 92 days ~~and within 7 days after a battery discharge where the battery terminal voltage went below 110 volts or battery overcharge above 150 volts,~~ by verifying that: L.2

1. ~~The parameters in Table 4.8-3 meet the Category B limits,~~ See ITS 3.8.6

SR 3.8.4.2 2. There is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than 150 x 10 to the minus 6 ohms, and

3. ~~Average electrolyte temperature of at least 10 connected cells is above 60°F.~~ See ITS 3.8.6

c. At least once per 18 months by verifying that:

SR 3.8.4.3 1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioation. that could degrade battery performance A.2

SR 3.8.4.4 Remove visible terminal corrosion
2. The cell-to-cell and terminal connections are clean, tight and coated with anti-corrosion material. M.2

SR 3.8.4.6 3. The battery charger will supply at least ~~200~~ 270 amperes ~~at~~ ≥ 125 volts for at least 4 hours. M.1 L.5

SR 3.8.4.5 4. The resistance of each cell-to-cell and terminal connection is less than or equal to 150×10^{-6} ohms. Note 1 L.4

SR 3.8.4.8 Note 3 Note 2 L.3 A.3
d. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to ~~supply and~~ maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subject to a battery service test.

SRs 3.8.4.9 3.8.4.8 Note L.3 A.3
e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. ~~Once per 60 month interval, this performance discharge test may be performed in place of the battery service test.~~

SR 3.8.4.9 L.3 A.3
f. At least once per 18 months, ~~during shutdown,~~ perform a performance discharge test of battery capacity if the battery shows signs of degradation or has reached 85% of its service life expected for the application. ~~Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average from previous performance discharge tests, or is below 90% of the manufacturer's rating.~~ LA.2

or modified performance test L.1

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A.1

ITS

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

24 hours

M.2

SR 3.8.6.2 FREQUENCIES

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

SR 3.8.6.2

1. The parameters in Table 4.8-3 meet the Category B limits,

2. There is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than 150 x 10 to the minus 6 ohms, and <see ITS 3.8.4>

SR 3.8.6.3 Action B

3. Average electrolyte temperature of at least 10 connected cells is above 60°F. representative LA.1

c. At least once per 18 months by verifying that:

1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioation.

2. The cell-to-cell and terminal connections are clean, tight and coated with anti-corrosion material. <see ITS 3.8.4>

3. The battery charger will supply at least 200 amperes at 125 volts for at least 4 hours.

4. The resistance of each cell-to-cell and terminal connection is less than or equal to 150 x 10^{-6} ohms.

d. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subject to a battery service test.

e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Once per 60 month interval, this performance discharge test may be performed in place of the battery service test.

f. At least once per 18 months, during shutdown, perform a performance discharge test of battery capacity if the battery shows signs of degradation or has reached 85% of its service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average from previous performance discharge tests, or is below 90% of the manufacturer's rating.

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A.1

TABLE 4.8-3

BATTERY SURVEILLANCE REQUIREMENTS

ITS

Table 3.8.6-1

	CATEGORY A(1)	CATEGORY B(2)	Category C
Parameter	Limits for each designated pilot cell	Limits for each connected cell	~~Allowable~~(3) ~~value~~ for each connected cell
Electrolyte Level	>Minimum level indication mark, and ≤ 1/4" above maximum level indication mark (a)	>Minimum level indication mark, and ≤ 1/4" above maximum level indication mark (a)	Above top of plates, and not overflowing
Float Voltage	≥ 2.13 volts	≥ 2.13 volts ~~(c)~~	> 2.07 volts
Specific Gravity b c ~~(a)~~	≥ 1.200 (b)	≥ 1.195 (b)	Not more than .020 below the average of all connected cells
		Average of all connected cells > 1.205	Average of all connected cells ≥ 1.195 (b)

A.3 L.2 LA.2 L.3

(b) (a) Corrected for electrolyte temperature and level.

(c) (b) Or battery charging current is less than ~~(12)~~ 2 amps when on charge (station batteries only).

(c) ~~For any cell with voltage below the limit and electrolyte temperature > 3°F from the average electrolyte temperature, correct the cell voltage for average electrolyte temperature.~~

Action A/B (C)

(1) For any Category A parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that within 24 hours all the Category B measurements are taken and found to be within their allowable values, and provided all Category A and B parameter(s) are restored to within limits within the next 6 days.

(2) For any Category B parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that the Category B parameters are within their allowable values and provided the Category B parameter(s) are restored to within limits within 7 days.

Category C (3) ~~Any Category B parameter not within its allowable value indicates an inoperable battery.~~

M.3 LA.2 A.3 L.2

(a) INSERT PROPOSED Notation (a)

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(A.1)

ITS 3.9.1

ITS

3/4.9 REFUELING OPERATIONS

BORON CONCENTRATION

and the refueling cavity (A.3)

LIMITING CONDITION FOR OPERATION

3.9.1

3.9.1 ~~With the reactor vessel head unbolted or removed,~~ the boron concentration of all filled portions of the Reactor Coolant System and the refueling canal shall be maintained ~~uniform and sufficient to ensure that the more restrictive of the following reactivity conditions is met:~~ (A.2) (LA.1)

a. ~~Either a K_{eff} of 0.95 or less, or~~

b. ~~A boron concentration of ≥ 2300 ppm~~ within the limit in the COLR

Applicability Note

APPLICABILITY: MODE 6~~*~~. (A.2)

-------Note-------
Only applicable to the refueling canal and refueling cavity when connected to the RCS.
------------------ (L.3)

ACTION:

Condition A

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes and initiate and continue boration ~~at ≥ 10 gpm of ≥ 12,950 ppm boric acid solution or its equivalent~~ ~~until K_{eff} is reduced to ≤ 0.95 or the boron concentration is restored to ≥ 2300 ppm, whichever is the more restrictive.~~ ~~The provisions of Specification 3.0.3 are not applicable.~~ (L.1) (LA.1) (A.4)

until boron concentration is within limit

SURVEILLANCE REQUIREMENTS

~~4.9.1.1 The more restrictive of the above two reactivity conditions shall be determined prior to:~~ (L.2)

~~a. Removing or unbolting the reactor vessel head, and~~

~~b. Withdrawal of any full length control rod located within the reactor pressure vessel, in excess of 3 feet from its fully inserted position.~~

SR 3.9.1.1

4.9.1.2 The boron concentration of the reactor coolant system and the refueling canal shall be determined by chemical analysis at least once per 72 hours.

~~* The reactor shall be maintained in MODE 6 when the reactor vessel head is unbolted or removed.~~ (A.2)

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ITS

3.9

3.9.3

A.1

REFUELING OPERATIONS

INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

M.4

LCO 3.9.3

OPERABLE.

3.9.2 As a minimum, two source range neutron flux monitors shall be ~~operating, each with continuous visual indication in the control room and one with audible indication in the containment.~~ LA.1

APPLICABILITY: MODE 6.

ACTION:

Action A

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes. ~~The provisions of Specification 3.0.3 are not applicable~~ L.1 A.2 L.1

insert proposed Required Action A.2

Action B

INSERT proposed Action B M.1

SURVEILLANCE REQUIREMENTS

4.9.2 Each source range neutron flux monitor shall be demonstrated OPERABLE by performance of:

a. ~~A CHANNEL FUNCTIONAL TEST at least once per 7 days, and~~ L.2

b. ~~A CHANNEL FUNCTIONAL TEST within 8 hours prior to the initial start of CORE ALTERATIONS, and~~

SR 3.9.3.1

c. A CHANNEL CHECK at least once per 12 hours ~~during CORE ALTERATIONS.~~ M.3

SR 3.9.3.2

INSERT proposed SR 3.9.3.2 M.2

REFUELING OPERATIONS

DECAY TIME

LIMITING CONDITION FOR OPERATION

3.9.3 The reactor shall be subcritical for at least 150 hours.

APPLICABILITY: During movement of irradiated fuel in the reactor pressure vessel.

ACTION:

With the reactor subcritical for less than 150 hours, suspend all operations involving movement of irradiated fuel in the reactor pressure vessel. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.3 The reactor shall be determined to have been subcritical for at least 150 hours by verification of the date and time of subcriticality prior to movement of irradiated fuel in the reactor pressure vessel.

R1

A.1

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ITS

REFUELING OPERATIONS

CONTAINMENT BUILDING PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 — 3.9.4 The containment building penetrations shall be in the following status:

a. The equipment door closed and held in place by a minimum of four bolts. A.3

b. A minimum of one door in ~~each~~ installed airlock is closed,* and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be ~~either~~: L.1

1. Closed by an isolation valve, blind flange, or manual valve, or equivalent or LA.1

2. Be capable of being closed by an OPERABLE ~~automatic~~ Containment Purge and Exhaust isolation valve.

APPLICABILITY: During ~~CORE ALTERATIONS or~~ movement of recently irradiated fuel within the containment. L.5

ACTION:

Action A.1 — With the requirements of the above specification not satisfied, immediately suspend all operations involving ~~CORE ALTERATIONS or~~ movement of recently ~~irradiated~~ fuel in the containment building. ~~The provisions of Specification 3.0.3 are not applicable.~~ L.5 A.2

SURVEILLANCE REQUIREMENTS

4.9.4 Each of the above required containment building penetrations shall be determined to be either ~~in its closed/isolated condition~~ in the required status or capable of being closed by an OPERABLE ~~automatic~~ Containment Purge and Exhaust isolation valve ~~within 100 hours prior to the start of and~~ at least ~~once per 7 days~~ every 18 months during ~~CORE ALTERATIONS or~~ movement of recently irradiated fuel in the containment building by: A.4 LA.1 L.2 L.3 L.5 LA.1

SR 3.9.4.1 — a. Verifying the penetrations are ~~in their closed/isolated condition~~ in the required status, ~~**~~ or A.4

~~b. Testing the Containment Purge and Exhaust isolation valves and system per the applicable portions of Specifications 4.6.3.1.2 and 4.9.9.~~ LA.1

3.9.4 NOTE 1 — * Both doors of the containment personnel airlock may be open provided:

~~a. One personnel airlock door is OPERABLE (i.e., the door is capable of being closed and that an individual is designated to close the door), and~~ LA.1

~~b1 There is at least 23 feet of water above the top of the reactor pressure vessel flange during movement of fuel assemblies within the containment, or~~

~~b2. There is at least 23 feet of water above the top of irradiated fuel assemblies within the reactor pressure vessel during CORE ALTERATIONS excluding movement of fuel assemblies.~~ A.5

~~** If both doors of the containment personnel airlock are open pursuant to Specification 3.9.4.b above, one door shall be verified to be capable of being closed at the above surveillance frequency.~~ LA.1

3.9.4 NOTE 2 — Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls. L.4

~~REFUELING OPERATIONS~~

~~COMMUNICATIONS~~

~~LIMITING CONDITION FOR OPERATION~~

~~3.9.5 Direct communications shall be maintained between the control room and personnel at the refueling station.~~

~~APPLICABILITY: During CORE ALTERATIONS.~~

~~ACTION:~~

~~When direct communications between the control room and personnel at the refueling station cannot be maintained, suspend all CORE ALTERATIONS. The provisions of Specification 3.0.3 are not applicable.~~

~~SURVEILLANCE REQUIREMENTS~~

~~4.9.5 Direct communications between the control room and personnel at the refueling station shall be demonstrated within one hour prior to the start of and at least once per 12 hours during CORE ALTERATIONS. Written documentation of the 12 hour checks is not required.~~

R.1

CTS 3.9.6

11-26-77

REFUELING OPERATIONS

MANIPULATOR CRANE OPERABILITY

LIMITING CONDITION FOR OPERATION

3.9.6 The manipulator crane and auxiliary hoist shall be used for movement of control rods or fuel assemblies and shall be OPERABLE with:

a. The manipulator crane used for movement of fuel assemblies having:

1. A minimum capacity of 3250 pounds, and

2. An overload cut off limit ≤ 2850 pounds.

b. The auxiliary hoist used for movement of control rods having:

1. A minimum capacity of 700 pounds, and

2. A load indicator which shall be used to prevent lifting loads in excess of 600 pounds.

R.1

APPLICABILITY: During movement of control rods or fuel assemblies within the reactor pressure vessel.

ACTION:

With the requirements for crane and/or hoist OPERABILITY not satisfied, suspend use of any inoperable manipulator crane and/or auxiliary hoist from operations involving the movement of control rods and fuel assemblies within the reactor pressure vessel. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.6.1 Each manipulator crane used for movement of fuel assemblies within the reactor pressure vessel shall be demonstrated OPERABLE within 100 hours prior to the start of such operations by performing a load test of at least 3250 pounds and demonstrating an automatic load cut off when the crane load exceeds 2850 pounds.

4.9.6.2 Each auxiliary hoist and associated load indicator used for movement of control rods within the reactor pressure vessel shall be demonstrated OPERABLE within 100 hours prior to the start of such operations by performing a load test of at least 700 pounds.

CTS 3.9.7

R.1

REFUELING OPERATIONS

CRANE TRAVEL – SPENT FUEL PIT

LIMITING CONDITION FOR OPERATION

3.9.7 Loads in excess of 2500 pounds shall be prohibited from travel over irradiated fuel assemblies in the spent fuel pit. This does not apply to movement of any spent fuel pit gate provided each of the following is satisfied:

a. the top of the gate (excluding lifting lugs) is no higher than 15 inches above the top of the moveable platform crane deck support beam while over irradiated fuel,

b. the gate is rigged to slack-free safety cables while over irradiated fuel,

c. irradiated fuel containing Rod Control Cluster Assemblies are excluded along the load path where the gate is moved, and

d. irradiated fuel is prohibited in the cask area when the gate is lifted over the spent fuel cask handling area. There is no restriction on lift height.

APPLICABILITY: With irradiated fuel assemblies in the spent fuel pit.

ACTION:

With the requirements of the above specification not satisfied, place the crane load in a safe condition. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.7.1 Loads other than the spent fuel pit gates shall be verified to be less than 2500 pounds prior to movement over irradiated fuel assemblies in the spent fuel pit.

4.9.7.2 For movement of any of the spent fuel pit gates:

a. gate lift height and slack-free redundant rigging shall be verified prior to moving over irradiated fuel,

b. load paths shall be verified not to have irradiated fuel with Rod Control Cluster Assemblies present in the gate load path, and

c. the spent fuel cask handling area shall be verified to have no irradiated fuel present prior to moving a gate over the area.

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(A.1)

ITS 3.9.5

8-27-90

ITS

3.9.5

3/4.9.8 RESIDUAL HEAT REMOVAL (RHR) AND COOLANT CIRCULATION

NORMAL WATER LEVEL

LIMITING CONDITIONS FOR OPERATION

3.9.8.1 At least one RHR loop shall be OPERABLE* and at least one RHR loop shall be in operation. A.2

APPLICABILITY: MODE 6 With the reactor vessel water level greater than or equal to 23 feet above the top of the reactor pressure vessel flange.

Action A.3

ACTION: a. With less than one RHR loop OPERABLE, immediately initiate corrective actions to return the required RHR loops to OPERABLE status as soon as possible. L.4

A.2

A.1

A.4-A.6

LCO NOTE

Insert proposed Action A.1

Insert proposed Action A.2 A.3

b. With less than one RHR loop in operation, except as provided in c. below, ~~suspend all operations involving an increase in the reactor decay heat load or a reduction in boron concentration of the Reactor Coolant System. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.~~ L.1

Insert proposed Actions A.4, A.5, A.6.1, and A.6.2

Insert proposed LCO Note

c. ~~The RHR loop may be removed from operation for up to 1 hour per 8 hour period during the performance of CORE ALTERATIONS in the vicinity of the reactor pressure vessel hot legs.~~ M.1

d. ~~The provisions of Specification 3.0.3 are not applicable.~~ A.4

SURVEILLANCE REQUIREMENTS

~~4.9.8.1.1 Verify the required RHR loop to be OPERABLE per Specification 4.0.5.~~ L.3

SR 3.9.5.1

4.9.8.1.2 At least once per ~~4~~ 12 hours, verify at least one RHR Loop is in operation and, L.2

~~a. If the RCS temperature >140° F or the time since entry into MODE 3 is <100 hours, circulating reactor coolant at a flow rate ≥3000 gpm.~~

~~b. If the RCS temperature ≤140° F and the time since entry into MODE 3 is ≥100 hours, circulating reactor coolant at a flow rate ≥2000 gpm to remove decay.~~ M.2

~~* The normal or emergency power source may be inoperable for each RHR loop.~~ A.2

ITS 3.9.6

A.1

ITS

REFUELING OPERATIONS

RESIDUAL HEAT REMOVAL (RHR) AND COOLANT CIRCULATION

LOW WATER LEVELS

LIMITING CONDITION FOR OPERATION

3.9.6

3.9.8.2 Two independent RHR loops shall be OPERABLE* with at least one loop in operation. A.2

LCO Notes

Insert LCO Note 1 and 2 L.5

APPLICABILITY: MODE 6 with the reactor vessel water level less than 23 feet above the top of the reactor pressure vessel flange.

Action A.1

Insert proposed Action A.2

ACTION: a. With less than the required RHR loops OPERABLE, immediately initiate corrective action to return the required RHR loops to OPERABLE status as soon as possible. A.3

Action A.2

Action B.1 & B.2

Insert proposed Actions B.1, B.2, B.3, B.4, B.5.1 and B.5.2

b. With less than one RHR loop in operation, suspend all operations involving ~~an increase in the reactor decay heat load or a~~ reduction in ~~boron concentration of the Reactor Coolant System.~~ ~~Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.~~ A.5 L.4 L.1

c. ~~The provisions of Specification 3.0.3 are not applicable.~~ A.4

SURVEILLANCE REQUIREMENTS

~~4.9.8.2.1 Verify the required RHR loops to be OPERABLE per Specification 4.0.5.~~ L.3

SR 3.9.6.1

4.9.8.2.2 At least once per ~~4~~ 12 hours, verify at least one RHR Loop is in operation and, L.2

a. if the RCS temperature >140° F or the time since entry into MODE 3 is <100 hours, circulating reactor coolant at a flow rate ≥3000 gpm.

b if the RCS temperature ≤140° F and the time since entry into MODE 3 is ≥100 hours, circulating reactor coolant at a flow rate ≥2000 gpm to remove decay.

SR 3.9.6.2

Insert Proposed SR 3.9.6.2 M.1

~~* The normal or emergency power source may be inoperable for each RHR loop.~~ A.2

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CTS 3.9.9

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CONTAINMENT PURGE AND EXHAUST ISOLATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.9 The Containment Purge and Exhaust isolation system shall be OPERABLE.

APPLICABILITY: MODE 6.

ACTION:

With the Containment Purge and Exhaust isolation system inoperable, close each of the Purge and Exhaust penetrations providing direct access from the containment atmosphere to the outside atmosphere. The provision of Specification 3.0.3 are not applicable.

R.1

SURVEILLANCE REQUIREMENTS

4.9.9 The Containment Purge and Exhaust isolation system shall be demonstrated OPERABLE within 100 hours prior to the start of and at least once per 7 days during CORE ALTERATIONS by verifying that containment Purge and Exhaust isolation occurs on manual initiation and on a high radiation test signal from the containment gaseous and particulate radiation monitoring instrumentation channels.

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A.1

ITS 3.9.7

2-15-89

REFUELING OPERATIONS

WATER LEVEL - REACTOR VESSEL

FUEL ASSEMBLIES

ITS

LIMITING CONDITION FOR OPERATION

LCO 3.9.7

3.9.10.1 At least 23 feet of water shall be maintained over the top of the reactor pressure vessel flange. A.3 L.1

APPLICABILITY: ~~MODE 6~~ during movement of irradiated fuel assemblies within the containment. L.1

Action A

ACTION: With the requirements of the above specification not satisifed, suspend all operations involving movement of irradiated fuel assemblies within the ~~reactor pressure vessel~~ Containment. ~~The provisions of Specification 3.0.3 are not applicable.~~ M.1 A.2

SURVEILLANCE REQUIREMENTS

SR 3.9.7.1

4.9.10.1 The water level shall be determined to be at least its minimum required depth ~~within 2 hours prior to the start of and~~ at least once per 24 hours ~~thereafter during movement of fuel assemblies.~~ L.2

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R.1

2-15-89

REFUELING OPERATIONS

WATER LEVEL - REACTOR VESSEL

CONTROL RODS

LIMITING CONDITION FOR OPERATION

3.9.10.2 At least 23 feet of water shall be maintained over the top of the irradiated fuel assemblies within the reactor pressure vessel.

APPLICABILITY: MODE 6 during movement of control rods within the reactor pressure vessel.

ACTION: With the requirements of the above specification not satisified, suspend all operations involving movement of control rods within the reactor pressure vessel. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.10.2 The water level shall be determined to be at least its minimum required depth within 2 hours prior to the start of and at least once per 24 hours thereafter during movement of control rods within the reactor pressure vessel.

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A.1

ITS 3.7.16

ITS.

REFUELING OPERATIONS

SPENT FUEL PIT WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.7.16

3.9.11 At least 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: ~~Whenever irradiated fuel assemblies are in the spent fuel pit.~~ During movement of irradiated fuel assemblies in the fuel storage pool

L.1

ACTION: irradiated

Action A

With the requirements of the specification not satisfied, suspend all movement of fuel assemblies ~~and crane operations with loads in the spent fuel pit areas and place the load in a safe condition. Restore water level to within its limit within 4 hours.~~ immediately. The provisions of Specification 3.0.3 are not applicable.

Required Action A.1 Note

L.2

SURVEILLANCE REQUIREMENTS

SR 3.7.16.1

4.9.11 The water level in the spent fuel pit shall be determined to be at least at the minimum required depth at least once per 7 days ~~when irradiated fuel assemblies are in the spent fuel pit.~~

L.1

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A.1

ITS

REFUELING OPERATIONS

FUEL BUILDING VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.15 3.9.12 A fuel building ventilation system shall be OPERABLE and discharging through at least one auxiliary building HEPA filter and charcoal adsorber assembly. L.2

APPLICABILITY: L.1

recently fuel building

a. During irradiated fuel movement within the spent fuel pit, or A.3

b. During crane operation with loads over irradiated fuel in the spent fuel pit. L.3

ACTION:

---NOTE---

The fuel building boundary may be opened intermittently under administrative control A.2

3.7.15 a. With a fuel building ventilation system inoperable, irradiated fuel movement within the storage pool or crane operation with loads over the spent fuel pit may proceed provided the fuel building ventilation system is in operation and discharging through at least one train of HEPA filters and charcoal adsorber assemblies. L.3 L.2

recently L.1

Action A.1 b. With no fuel building ventilation system OPERABLE, suspend all operations involving movement of irradiated fuel within the spent fuel pit or crane operation with loads over the spent fuel pit until at least one fuel building ventilation system is restored to OPERABLE status. L.3

c. The provisions of Specifications 3.0.3, 3.0.4 and 4.0.4 are not applicable. A.4

SURVEILLANCE REQUIREMENTS

4.9.12 The above required fuel building ventilation system shall be demonstrated OPERABLE and discharging through at least one auxiliary building HEPA filter and charcoal adsorber assembly: L.2

a. At least once per 31 days by initiating flow through the HEPA filter and charcoal adsorber assembly for 15 minutes L.2

SR 3.7.15.1 b. At least once per 18 months during system operation, by verifying a 1/8 inch vacuum, water gauge, relative to the outside atmosphere, and

c. By performance of the Surveillance Requirements of Specification 4.7.8.1 b, c, d, e and f. L.2

3/4.10 SPECIAL TEST EXCEPTIONS

SHUTDOWN MARGIN

LIMITING CONDITION FOR OPERATION

3.10.1 The SHUTDOWN MARGIN requirement of Specification 3.1.1.1 may be suspended for measurement of control rod worth and SHUTDOWN MARGIN provided the reactivity equivalent to at least the highest estimated control rod worth is available for trip insertion from OPERABLE control rod(s).

APPLICABILITY: MODE 2.

ACTION:

a. With any full length control rod not fully inserted and with less than the above reactivity equivalent available for trip insertion, initiate and continue boration at ≥ 10 gpm of at least 12,950 ppm boric acid solution or its equivalent until the SHUTDOWN MARGIN required by Specification 3.1.1.1 is restored.

b. With all full length control rods inserted and the reactor sub-critical by less than the above reactivity equivalent, immediately initiate and continue boration at ≥ 10 gpm of at least 12,950 ppm boric acid solution or its equivalent until the SHUTDOWN MARGIN required by Specification 3.1.1.1 is restored.

M.1

SURVEILLANCE REQUIREMENTS

4.10.1.1 The position of each full length rod either partially or FULLY WITHDRAWN shall be determined at least once per 2 hours.

4.10.1.2 Each full length rod that is not fully inserted shall be demonstrated capable of full insertion when tripped from at least 50% withdrawn position within 24 hours prior to reducing the SHUTDOWN MARGIN to less than the limits of Specification 3.1.1.1.

ITS 3.1.9
9-7-88

M.2

SPECIAL TEST EXCEPTIONS

GROUP HEIGHT, INSERTION AND POWER DISTRIBUTION LIMITS

LIMITING CONDITION FOR OPERATION

3.10.2 The group height, insertion and power distribution limits of Specifications 3.1.3.1, 3.1.3.5, 3.1.3.6, and 3.2.4 may be suspended during the performance of PHYSICS TESTS provided:

a. The THERMAL POWER is maintained ≤ 85% of RATED THERMAL POWER, and

b. The limits of Specifications 3.2.2 and 3.2.3 are maintained and determined at the frequencies specified in Specification 4.10.2.2 below.

APPLICABILITY: MODE 1.

ACTION:

With any of the limits of Specifications 3.2.2 or 3.2.3 being exceeded while the requirements of Specifications 3.1.3.1, 3.1.3.5, 3.1.3.6, and 3.2.4 are suspended, either:

a. Reduce THERMAL POWER sufficient to satisfy the ACTION requirements of Specifications 3.2.2 and 3.2.3, or

b. Be in HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.10.2.1 The THERMAL POWER shall be determined to be ≤ 85% of RATED THERMAL POWER at least once per hour during PHYSICS TESTS.

4.10.2.2 The Surveillance Requirements of Specifications 4.2.2 and 4.2.3 shall be performed at the following frequencies during PHYSICS TESTS:

a. Specification 4.2.2 - At least once per 12 hours.

b. Specification 4.2.3 - At least once per 12 hours.

A.1

ITS 3.1.9

07-30-97

ITS

SPECIAL TEST EXCEPTIONS

PHYSICS TESTS 3.1.3, 3.1.4, 3.1.5, 3.1.6, and 3.4.2 A.1

LIMITING CONDITION FOR OPERATION

LCO 3.1.9 3.10.3 The limitations of Specifications 3.1.1.4, 3.1.3.1, 3.1.3.5 and 3.1.3.6 may be suspended during the performance of PHYSICS TESTS provided:

LCO 3.1.9.c a. The THERMAL POWER does not exceed 5% of RATED THERMAL POWER,

~~b. The reactor trip setpoints on the OPERABLE Intermediate Range Channels are set at less than or equal to 35% of RATED THERMAL POWER, and~~ A.2

~~c. The reactor trip setpoints on the OPERABLE Power Range Channels are set at less than or equal to 25% of RATED THERMAL POWER.~~

APPLICABILITY: MODE 2. During PHYSICS TESTS initiated in MODE 2. A3

ACTION:

Action B With the THERMAL POWER > 5% of RATED THERMAL POWER, immediately open the reactor trip breakers. Insert proposed Action A M.3

ACTIONS A, C, D

SURVEILLANCE REQUIREMENTS Insert proposed Actions C + D M.4

SR 3.1.9.3 4.10.3.1 The THERMAL POWER shall be determined to be ≤ 5% of RATED THERMAL POWER at least once per hour during PHYSICS TESTS. 30 minutes M.5

SR 3.1.9.1 4.10.3.2 Each Intermediate and Power Range Channel shall be subjected to a CHANNEL FUNCTIONAL TEST within 12 hours prior to initiating PHYSICS TESTS. L.1

and the number of required channels for LCO 3.3.1, "RTS Instrumentation," Functions 2, 3, 6, and 18.d, may be reduced to "3" required channels, L.2

LCO 3.1.9.a
LCO 3.1.9.b

RCS lowest loop average temperature is ≥ 531°F; and M.4

SDM is within the limits provided in the COLR M3

SR 3.1.9.2 Insert proposed SR 3.1.9.2 M.4

SR 3.1.9.4 Insert proposed SR 3.1.9.4 M3

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A.1

SPECIAL TEST EXCEPTIONS

REACTOR COOLANT LOOPS

LIMITING CONDITION FOR OPERATION

ITS 3.4.19

3.10.4 The limitations of Specification ~~3.4.1.1~~ 3.4.4 may be suspended during the performance of startup and PHYSICS TESTS provided: A.1

a. The THERMAL POWER does not exceed the P-7 Interlock Setpoint,

b. ~~The Reactor Trip Setpoints on the OPERABLE Intermediate Range Channels are set at less than or equal to 35% of RATED THERMAL POWER, and~~ A.4

c. ~~The Reactor Trip Setpoints on the OPERABLE Power Range Channels are set at less than or equal to 25% of RATED THERMAL POWER.~~

Appl. APPLICABILITY: ~~During operation below the P-7 Interlock Setpoint.~~ MODES 1 and 2 during startup and PHYSICS TESTS A.2

ACTION A ACTION:

With the THERMAL POWER greater than the P-7 Interlock Setpoint, immediately open the reactor trip breakers.

SURVEILLANCE REQUIREMENTS

SR 3.4.19.1 4.10.4.1 The THERMAL POWER shall be determined to be less than P-7 Interlock Setpoint at least once per hour during startup and PHYSICS TESTS.

SR 3.4.19.2 4.10.4.2 Each Intermediate, Power Range Channel and P-7 Interlock shall be subjected to a CHANNEL ~~FUNCTIONAL~~ OPERATIONAL TEST ~~within 12 hours~~ prior to initiating startup or PHYSICS TESTS. L.1 A.3

THIS PAGE DELETED

ITS 5.0
7-19-90

A.1

Specifications 3/4.11.1.1 through 3/4.11.1.3 have been deleted

(A.1)

ITS 5.0

7-19-90

ITS

RADIOACTIVE STORAGE

LIQUID HOLDUP TANKS

LIMITING CONDITION FOR OPERATION

5.5.11.c 3.11.1.4 The quantity of radioactive material contained in each of the following unprotected outdoor tanks shall be limited ~~to less than or equal to 10 curies,~~ excluding tritium ~~and dissolved or entrained noble gases~~: (LA.7)

a. Refueling Water Storage Tank
b. Casing Cooling Storage Tank
c. PG Water Storage Tank* (LA.7)
d. Boron Recovery Test Tank*
e. Any Outside Temporary Tank**

~~APPLICABILITY: At all times.~~ (LA.7)

~~ACTION:~~

~~a. With the quantity of radioactive material in any of the above listed tanks exceeding the above limit, immediately suspend all additions of radioactive material to the tank and within 48 hours reduce the tank contents to within the limit.~~

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

~~SURVEILLANCE REQUIREMENTS~~

~~4.11.1.4 The quantity of radioactive material contained in each of the above listed tanks shall be determined to be within the above limit by analyzing a representative sample of the tank's contents at least once per week when radioactive materials are being added to the tank.~~

INSERT Proposed 5.5.11.c (M.11)

~~*This is a shared system with Unit 2.~~ (LA.7)

**Tanks included in this Specification are those outdoor tanks that are not surrounded by liners, dikes, or walls capable of holding the tank contents and that do not have tank overflows and surrounding area drains connected to the liquid radwaste ion exchanger system.

INSERT → (A.18)

ITS 5.0

7-19-90

A.1

~~Specifications 3/4.11.2.1 through 3/4.11.2.4 have been deleted~~

A.1

ITS

INSERT →

9-25-91

M.11

RADIOACTIVE STORAGE

3/4.11.2 GAS STORAGE

EXPLOSIVE GAS MIXTURE

LIMITING CONDITIONS FOR OPERATION

5.5.11.a 3.11.2.5 The concentration of oxygen in the waste gas decay tanks shall be limited to less than or equal to 2% by volume whenever the hydrogen concentration could exceed 4% by volume.

APPLICABILITY: At all times.

ACTION:

a. With the concentration of oxygen in the affected waste gas decay tank greater than 2% by volume but less than or equal to 4% by volume, reduce the oxygen concentration to the above limits within 48 hours.

b. With the concentration of oxygen in the affected waste gas decay tank greater than 4% volume immediately suspend all additions of waste gases to the affected tank and reduce the concentration of oxygen to less than or equal to 4% by volume without delay, then continue with Action "a" above.

c. With the requirements of Action "a" not satisfied, immediately suspend all additions of waste gases to the affected tank until the oxygen concentration is restored to less than 2% by volume, and submit a Special Report to the commission pursuant to Specification 6.9.2 within the next 30 days outlining the following:

1. The cause of the waste gas decay tank exceeding the 2% oxygen limit,

2. the reason why the oxygen concentration could not be returned to within limits, and

3. actions taken and the time required to return the oxygen concentration to within limits.

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

LA.7

SURVEILLANCE REQUIREMENTS

4.11.2.5 The concentration of oxygen in the waste gas decay tanks shall be determined to be within the above limits by continuously monitoring the waste gases in the inservice waste gas decay tank with the oxygen monitor required OPERABLE by Table 3.3-14 of Specification 3.3.3.11.

INSERT proposed 5.5.11.a

M.11

ITS

(A.1)

ITS 5.0

7-19-90

RADIOACTIVE STORAGE

GAS STORAGE TANKS

LIMITING CONDITION FOR OPERATION

5.5.11.b 3.11.2.6 The quantity of radioactivity contained in each gas storage tank shall be limited to less than or equal to ≤ 25,000 curies noble gases (considered as Xe-133).

APPLICABILITY: At all times.

ACTION:

a. With the quantity of radioactive material in any gas storage tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank and within 48 hours reduce the tank contents to within the limit. (LA.7)

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

SURVEILLANCE REQUIREMENTS

4.11.2.6 The quantity of radioactive material contained in each gas storage tank shall be determined to be within the above limit at least once per month when the specific activity of the primary reactor coolant is ≤ 1.0 µCi/gm DOSE EQUIVALENT I-131. Under conditions which result in a specific activity > 1.0 µCi/gm DOSE EQUIVALENT I-131, the Gas Storage Tank(s) shall be sampled once per 24 hours, when radioactive materials are being added to the tank.

Insert proposed 5.5.11.b (M.11)

ITS 5.0

A.1

~~Specifications 3/4.11.3 through 3/4.11.4 have been deleted~~

Insert proposed 5.5.12 M.5

Insert proposed 5.5.13 M.6

Insert proposed 5.5.14 L.14

Insert proposed 5.5.15 A.10

Specifications 3/4.12.1 through 3/4.12.3 have been deleted.

ITS

4.1

5.0 DESIGN FEATURES

(A3)

5.1 SITE

Insert proposed 4.1

(LA.1)

~~EXCLUSION AREA~~

~~5.1.1 The exclusion area (site boundary) shall be as shown in Figure 5.1-1.~~

~~LOW POPULATION ZONE~~

~~5.1.2 The low population zone shall be as shown in Figure 5.1-2.~~

~~MAP DEFINING UNRESTRICTED AREAS FOR RADIOACTIVE GASEOUS AND LIQUID EFFLUENTS~~

~~5.1.3 Information regarding radioactive gaseous and liquid effluents, which allows identification of structures and release points as well as definition of UNRESTRICTED AREAS within the SITE BOUNDARY that are accessible to MEMBERS OF THE PUBLIC, shall be as shown in Figure 5.1-1.~~

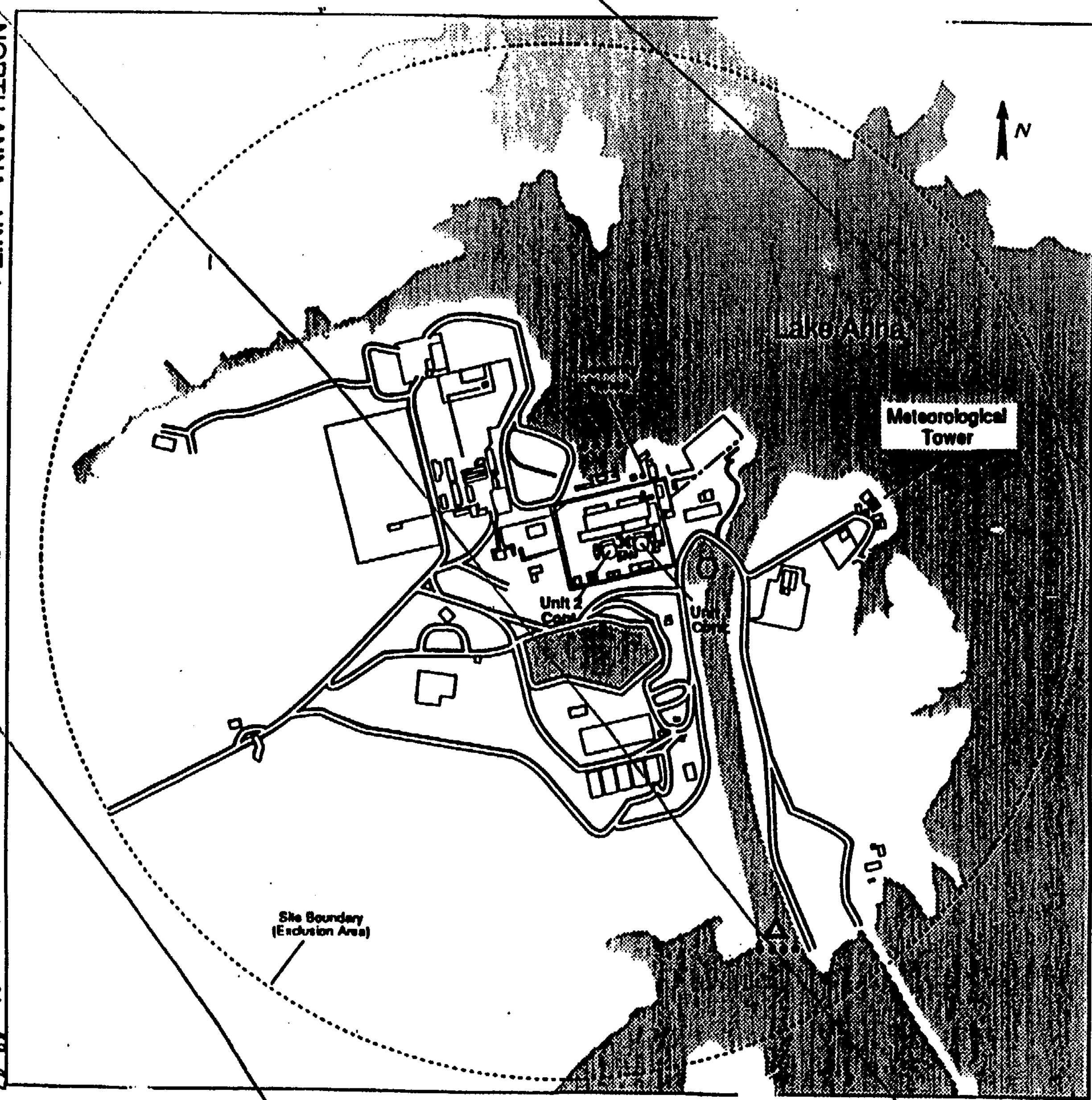
~~5.2 CONTAINMENT~~

(LA.2)

~~CONFIGURATION~~

~~5.2.1 The reactor containment building is a steel lined, reinforced concrete building of cylindrical shape with a dome roof and having the following design features:~~

- ~~a. Nominal inside diameter = 126 feet.~~
- ~~b. Nominal inside height = 190 feet, 7 inches.~~
- ~~c. Minimum thickness of concrete walls = 4.5 feet.~~
- ~~d. Minimum thickness of concrete roof = 2.5 feet.~~
- ~~e. Minimum thickness of concrete floor pad = 10 feet.~~
- ~~f. Nominal thickness of the cylindrial portion of the steel liner = 3/8 inches.~~
- ~~g. Net free volume = 1.825 x 10^6 cubic feet.~~
- ~~h. Nominal thickness of hemispherical dome portion of the steel liner = 1/2 inch.~~



Notes:

× Gaseous Releases

1. Process Vent - 157.5 Ft.
2. Vent - Vent A & B and other release points considered ground level releases.

⬡ Liquid Release to the Discharge Canal

Δ Liquid Release to the Unrestricted Area

•••• Buoy Barriers

------ Site Boundary - Area at or beyond which is unrestricted for gaseous effluents.

Land Maximum Member of the Public Occupancy = 336 hrs/year

Lake Maximum Member of the Public Occupancy = 2232 hrs/year

Figure 5.1.1

Map Defining Unrestricted Areas for Radioactive Gaseous and Liquid Effluents

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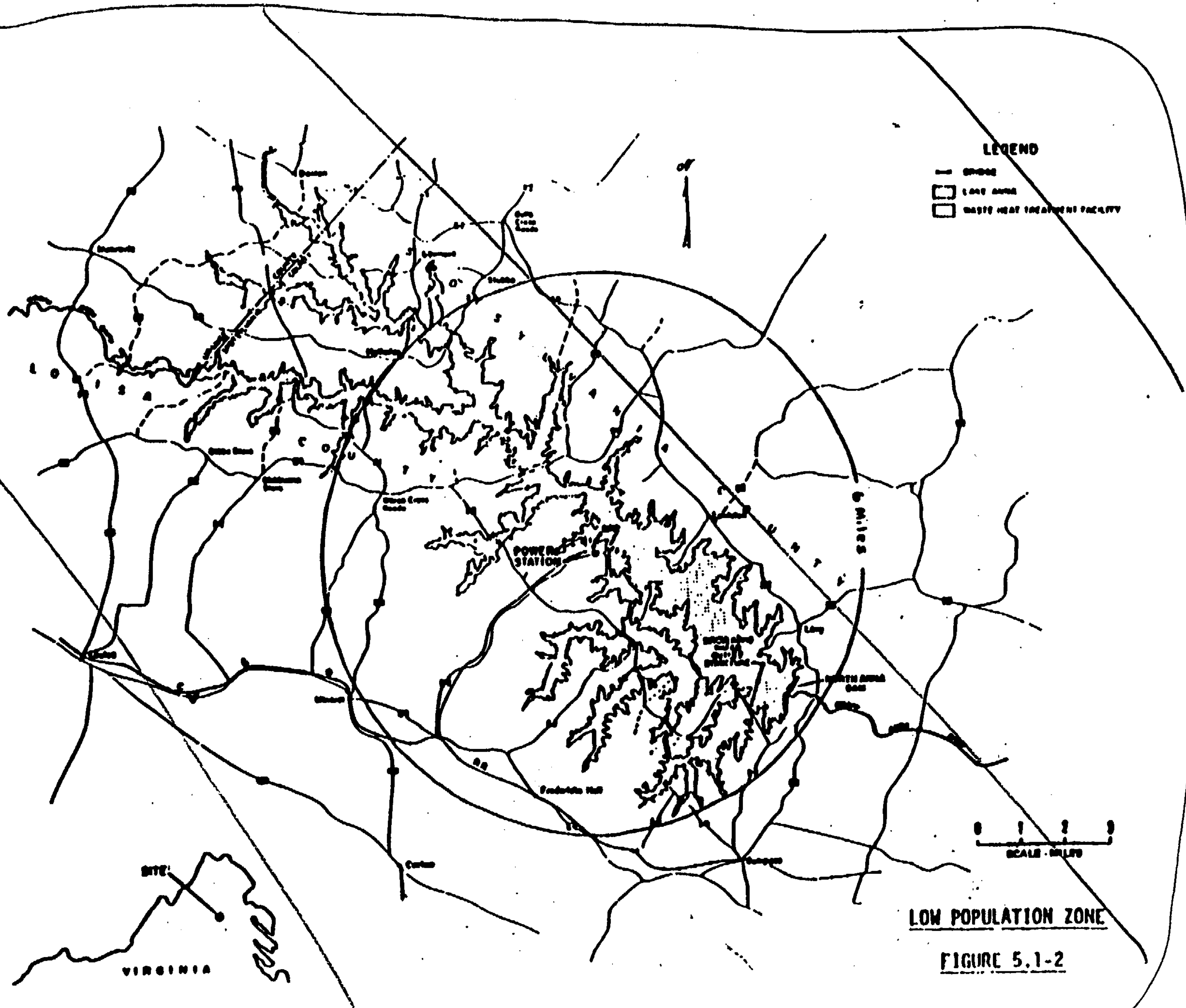

LOW POPULATION ZONE

FIGURE 5.1-2

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LA.1

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A.1

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ITS

~~DESIGN PRESSURE AND TEMPERATURE~~

~~5.2.2 The reactor containment building is designed and shall be maintained for a maximum internal pressure of 45 psig and a temperature of 280°F.~~ LA.2

5.3 REACTOR CORE

FUEL ASSEMBLIES

Each assembly shall consist of a matrix of

4.2.1 5.3.1 The reactor core shall contain 157 fuel assemblies ~~with each fuel assembly containing 264 fuel rods clad with~~ Zircaloy-4 or ZIRLO. ~~Each fuel rod shall have a nominal active fuel length of 144 inches. The initial core loading shall have a maximum enrichment of 3.2 weight percent U-235.~~ LA.3

4.3.1.1.a
4.3.1.2.a

Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum enrichment of 4.3 weight percent U-235. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with NRC-approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those designs that have been analyzed with applicable NRC staff-approved codes and methods, and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core locations.

CONTROL ROD ASSEMBLIES

4.2.2 5.3.2 The reactor core shall contain 48 full length control rod assemblies. ~~The full length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80 percent silver, 15 percent indium and 5 percent cadmium. All control rods shall be clad with stainless steel tubing.~~

The control material shall be silver indium cadmium as approved by the NRC LA.4

~~5.4 REACTOR COOLANT SYSTEM~~

~~DESIGN PRESSURE AND TEMPERATURE~~

~~5.4.1 The reactor coolant system is designed and shall be maintained:~~ LA.5

Fuel rods with an initial composition of natural or slightly enriched ceranium dioxide (UO_2) as fuel material.

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ITS

DESIGN FEATURES

a. ~~In accordance with the code requirements specified in Section 5.2 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,~~

b. ~~For a pressure of 2485 psig, and~~

c. ~~For a temperature of 650°F, except for the pressurizer which is 680°F.~~ LA.5

~~VOLUME~~

~~5.4.2 The total water and steam volume of the reactor coolant system is approximately 10,000 cubic feet at nominal operating conditions.~~

~~5.5 METEOROLOGICAL TOWER LOCATION~~ LA.6

~~5.5.1 The meteorological tower shall be located as shown on Figure 5.1-1.~~

5.6 FUEL STORAGE

CRITICALITY

5.6.1.1 The spent fuel storage racks are designed and shall be maintained with:

4.3.1.1.a a. A K_{eff} equivalent to less than or equal to 0.95 when flooded with unborated water, which includes a conservative allowance of 3.4% delta k/k for uncertainties.

4.3.1.1.C b. A nominal 10 9/16 inch center-to-center distance between fuel assemblies placed in the storage racks.

4.3.1.2.c 4.3.1.2.d 5.6.1.2 The new fuel pit storage racks are designed and shall be maintained with a nominal 21 inch center-to-center distance between new fuel assemblies such that, on a best estimate basis, K_{eff} will not exceed .98, with fuel of the highest anticipated enrichment in place, when aqueous foam moderation is assumed.

~~5.6.1.3 If new fuel for the first core loading is stored dry in the spent fuel storage racks, the center-to-center distance between the new fuel assemblies will be administratively limited to 28 inches and the k_{eff} shall not exceed 0.98 when aqueous foam moderation is assumed.~~ A.2

4.3.1.2.b Insert proposed 4.3.1.2.b M.1

ITS

DESIGN FEATURES

DRAINAGE

4.3.2 5.6.2 The spent fuel pit is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 288.83 feet. Mean Sea Level, USGS datum.

CAPACITY

4.3.3 5.6.3 The fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 1737 fuel assemblies.

5.7 COMPONENT CYCLIC OR TRANSIENT LIMIT

5.7.1 The components identified in Table 5.7-1 are designed and shall be maintained within the cyclic or transient limits of Table 5.7-1.

See ITS Chapter 5.0

ITS

DESIGN FEATURES

DRAINAGE

5.6.2 The spent fuel pit is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 288.83 feet. Mean Sea Level, USGS datum.

See ITS 4.3.2

CAPACITY

5.6.3 The fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 1737 fuel assemblies.

See ITS 4.3.3

5.5.5

5.7 COMPONENT CYCLIC OR TRANSIENT LIMIT

the UFSAR, Section 5.2,

5.7.1 The components identified in ~~Table 5.7-1~~ are designed and shall be maintained within the cyclic or transient design limits ~~of Table 5.7-1~~.

LA.2

A.1

TABLE 5.7-1

COMPONENT CYCLIC OR TRANSIENT LIMITS

COMPONENT	CYCLIC OR TRANSIENT LIMIT	DESIGN CYCLE OR TRANSIENT
Reactor Coolant System	200 heatup cycles at 100°F/hr and 200 cooldown cycles at 100°F/hr	Heatup cycle $-T_{avg}$ from $\leq$ 200°F to $\geq$ 550°F. Cooldown cycle $-T_{avg}$ from $\geq$ 550°F to $\leq$ 200°F.
	200 pressurizer cooldown cycles at 200°F/hr	Pressurizer cooldown cycle temperatures from $\geq$ 650°F to $\leq$ 200°F.
	80 loss of load cycles, without immediate turbine or reactor trip.	$\geq$ 15% of RATED THERMAL POWER to 0% of RATED THERMAL POWER.
	40 cycles of loss of offsite A.C. electrical power.	Loss of offsite A.C. electrical power source supplying the onsite ESF Electrical System.
	80 cycles of loss of flow in one reactor coolant loop.	Loss of only one reactor coolant pump.
	400 reactor trip cycles.	100% to 0% of RATED THERMAL POWER. (Full Power Trip)
	10 inadvertent pressurizer auxiliary spray actuation cycles.	Spray water temperature differential > 320°F.

LA.2

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(A.1)

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6.0 ADMINISTRATIVE CONTROLS

6.1 RESPONSIBILITY

plant manager

5.1.1 6.1.1 The ~~Site Vice President~~ shall be responsible for overall facility operation. ~~In his absence, the Manager - Station Operations and Maintenance shall be responsible for overall facility operation.~~ During ~~the~~ his absence ~~of both~~ the ~~Site Vice President~~ shall delegate in writing the succession to this responsibility. ← INSERT 1 (L.4) (M.1)

5.1.2 6.1.2 The Shift Supervisor (or during his absence from the Control Room, a designated individual) shall be responsible for the Control Room command function and shall be the only individual that may direct the licensed activities of licensed operators. ~~A management directive to this effect, signed by the Senior Vice President - Nuclear, shall be reissued to all station personnel on an annual basis.~~ (L.5)

6.2 ORGANIZATION

ONSITE AND OFFSITE ORGANIZATION

5.2.1 6.2.1 Onsite and Offsite Organization

An onsite and an offsite organization shall be established for facility operation and corporate management. The onsite and offsite organization shall include the positions for activities affecting the safety of the nuclear power plant.

5.2.1 a. Lines of authority, responsibility, and communication shall be established and defined for the highest management levels through intermediate levels to and including all operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. ~~These requirements~~ shall be documented in the UFSAR. /QA Plan INSERT 2 (M.7)

plant manager

5.2.1.b b. The ~~Site Vice President~~ shall be responsible for overall unit safe operation and shall have control over those onsite activities necessary for safe operation and maintenance of the plant. (L.6)

A specified corporate officer

5.2.1.c c. ~~The Vice President - Nuclear Operations~~ shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety. (L.6)

individuals

5.2.1.d d. The ~~management position~~ responsible for training of the operating staff and ~~the management position responsible~~ for the quality assurance functions, shall have sufficient organizational freedom including sufficient independence from ~~cost and schedule when opposed to safety considerations~~. (M.15)

operating pressures

may report to the appropriate onsite manager; however, these individuals

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may report to the appropriate onsite manager, however, these individuals

sufficient organizational freedom to ensure their independence from operating pressures

ADMINISTRATIVE CONTROLS individuals

M.15

5.2.1.d e. The management position responsible for health physics shall have direct access to that onsite individual having responsibility for overall facility management. Health physics personnel shall have the authority to cease any work activity when worker safety is jeopardized or in the event of unnecessary personnel radiation exposures.

FACILITY STAFF include

5.2.2 6.2.2 The Facility organization shall be as shown in the UFSAR. L.3

5.2.2.a a. Each on duty shift shall be composed of at least ~~the~~ minimum shift crew composition shown in Table 6.2-1.

b. ~~At least one licensed Reactor Operator shall be in the control room when fuel is in the reactor. In addition, while the unit is in MODES 1, 2, 3 or 4, at least one licensed Senior Reactor Operator shall be in the Control Room.~~ A.34

5.2.2.c radiation protection c. A health physics technician# shall be onsite when fuel is in the reactor. L.11

d. ~~ALL CORE ALTERATIONS shall be observed and directly supervised by either a licensed Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation.~~

A.9

ITS 5.2.2.c # The health physics technician composition may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence provided immediate action is taken to fill the required positions. L.11

A.1

ITS 5.0

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6.2.3 STATION NUCLEAR SAFETY (SNS)

FUNCTION

6.2.3.1 SNS shall function to examine plant operating characteristics, NRC issuances, industry advisories, Licensee Event Reports, and other sources which may indicate areas for improving plant safety.

COMPOSITION

6.2.3.2 SNS shall be composed of at least five dedicated, full-time engineers located onsite.

RESPONSIBILITIES

6.2.3.3 SNS shall be responsible for maintaining surveillance of plant activities to provide independent verification* that these activities are performed correctly and that human errors are reduced as much as practical.

6.2.3.4 SNS shall disseminate relevant operational experience.

AUTHORITY

6.2.3.5 SNS shall make detailed recommendations for revised procedures, equipment modifications, or other means of improving plant safety to the Manager - Station Safety and Licensing.

LA.4

6.2.4 SHIFT TECHNICAL ADVISOR

5.2.2.f 6.2.4.1 ~~The Shift Technical Advisor~~ An individual shall serve in an advisory capacity to ~~Shift Supervisor~~ Unit operations shift crew on ~~matters pertaining to the engineering aspects of assuring~~ the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. This individual shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift. A.28

M.12

* Not responsible for sign-off function LA.4

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TABLE 6.2-1[a]

MINIMUM SHIFT CREW COMPOSITION

Total Staffing Requirements for Station Operation

With Either or Both Units in Mode 1, 2, 3 or 4 (A.2)

POSITION	NUMBER	CONDITIONS	
SS -	ONE	(Shift Supervisor may fulfill duties for both units).	
SRO -	ONE	(If ONE unit is in MODE 5, 6 OR DEFUELED, Senior Reactor Operator is assigned to the Unit in MODE 1, 2, 3 or 4).	L.8
RO -	THREE	(ONE Reactor Operator is assigned to each unit PLUS one is shared by both units).	
5.2.2.a AO -	FOUR	(TWO Auxiliary Operators are assigned to each unit).	
STA -	ONE	(Shift Technical Advisor may fulfill duties for both units).	

With Both Units in Mode 5 or 6 (or DEFUELED) (L.9) (A.2)

POSITION	NUMBER	CONDITIONS	
SS -	ONE	(Shift Supervisor may fulfill duties for both units).	
SRO -	NONE		L.8
RO -	TWO	(ONE Reactor Operator is assigned to each unit).	
5.2.2.a AO -	TWO One	(ONE Auxiliary Operator is assigned to each unit).	L.9
STA -	ONE	(Shift Technical Advisor may fulfill duties for both units).	A.2

a - This Table and Table 6.2.1 of Unit 2 Technical Specifications represent Total Station Staffing and ARE NOT ADDITIVE. (A.2)

A.1

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TABLE 6.2-1 (Continued)

SS - Shift Supervisor with a Senior Reactor Operators License on Unit 1.
SRO - Individual with a Senior Reactor Operators License on Unit 1.
RO - Individual with a Reactor Operators License on Unit 1.
AO - Auxiliary Operator
STA - Shift Technical Advisor

A.12

10 CFR 50.54(m)(2)(ii) and 5.2.2.a and 5.2.2.f

A.2

ITS 5.2.2.b

Except for the Shift Supervisor, the Shift Crew Composition may be one less than the minimum requirements of Table 6.2-1 for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the Shift Crew Composition to within the minimum requirements of Table 6.2-1. This provision does not permit any shift crew position to be unmanned upon shift change due to an oncoming shift crewman being late or absent.

L.1 A.2 L.1

ITS 5.1.2

During any absence of the Shift Supervisor from the Control Room while the unit is in MODE 1, 2, 3 or 4, an individual (other than the Shift Technical Advisor) with a valid SRO license shall be designated to assume the Control Room command function. During any absence of the Shift Supervisor from the Control Room while the unit is in MODE 5 or 6, an individual with a valid SRO or RO license (other than the Shift Technical Advisor) shall be designated to assume the Control Room command function.

L.18 A.6 L.18

ITS 5.2.2.d

limit

Procedures will be established to insure that NRC policy statement guidelines regarding work hours established for employees are followed. In addition, procedures will provide for documentation of authorized deviations from these guidelines and that the documentation is available for NRC review.

L.24 L.10

Insert 5.2.2.d

M.18

(A.1)

ITS 5.0

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6.3 FACILITY STAFF QUALIFICATIONS

5.3.1 6.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of ANS 3.1 (12/79 Draft)* for comparable positions, except for:

5.3.1 1. The Superintendent - Radiological Protection shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975.

the individual providing advisory technical support to the unit operations shift crew (A.28)

5.3.1 2. Incumbents in the positions of Shift Supervisor, Assistant Shift Supervisor (SRO), Control Room Operator - Nuclear (RO), and ~~Shift Technical Advisor~~, shall meet or exceed the requirements of 10 CFR 55.59(c) and 55.31(a)(4). INSERT (A.29)

5.2.2.e 3. The Superintendent Operations shall hold (or have previously held) a Senior Reactor Operator License for North Anna Power Station or a similar design Pressurized Water Reactor plant.

5.2.2.e 4. The Supervisor Shift Operations shall hold an active Senior Reactor Operator License for North Anna Power Station.

~~6.4 TRAINING~~

~~6.4.1 The Manager - Nuclear Training is responsible for ensuring that retraining and replacement training programs for the licensed facility staff meet or exceed the requirements of 10 CFR 55.59(c) and 55.31(a)(4). Also, a retraining and replacement training program for non-licensed facility staff shall meet or exceed the recommendations of Section 5 of ANS 3.1 (12/79 Draft)*.~~ (L.19)

~~6.5 REVIEW AND AUDIT~~

~~6.5.1 STATION NUCLEAR SAFETY AND OPERATING COMMITTEE (SNSOC)~~ (LA.6)

~~FUNCTION~~

~~6.5.1.1 The SNSOC shall function to advise the Site Vice President on all matters related to nuclear safety.~~

~~* Exceptions to this requirement are specified in VEPCO's QA Topical Report, VEP-1, "Quality Assurance Program, Operational Phase."~~ (L.19)

(A.1)

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COMPOSITION

6.5.1.2 The SNSOC shall be composed of:

Chairman:	Manager - Station Safety and Licensing
Vice Chairman and Member:	Manager - Station Operations and Maintenance
Member:	Superintendent - Operations
Member:	Superintendent - Maintenance
Member:	Superintendent - Radiological Protection
Member:	Superintendent - Engineering

ALTERNATES

6.5.1.3 All alternate members shall be appointed in writing by the SNSOC Chairman to serve on a temporary basis; however, no more than one alternate shall participate as a voting member in SNSOC activities at any one time.

LA.6

MEETING FREQUENCY

6.5.1.4 The SNSOC shall meet at least once per calendar month and as convened by the SNSOC Chairman or his designated alternate.

QUORUM

6.5.1.5 A quorum of the SNSOC consists of the Chairman or Vice-Chairman and two members including alternates.

RESPONSIBILITIES

6.5.1.6 The SNSOC shall be responsible for:

a. Review of 1) all new procedures required by Specifications 6.8.1 and 6.8.2, 2) all procedure changes that require a safety evaluation, 3) all programs required by Specification 6.8.4 and changes thereto, and 4) any other procedures or changes thereto as determined by the Site Vice President to affect nuclear safety. LA.6

b. Review of all proposed tests and experiments that affect nuclear safety.

c. Review of all proposed changes or modifications to plant systems or equipment that affect nuclear safety.

d. Review of all proposed changes to Appendix "A" Technical Specifications and Appendix "B" Environmental Protection Plan. Recommended changes shall be submitted to the Site Vice President.

e. Investigation of all violations of the Technical Specifications including the preparation and forwarding of reports covering evaluation and recommendations to prevent recurrence to the Vice President - Nuclear Operations and the MSRC.

f. Review of all REPORTABLE EVENTS and Special Reports.

g. Review of facility operations to detect potential nuclear safety hazards.

h. Performance of special reviews, investigations or analyses and reports thereon as requested by the Chairman of the Station Nuclear Safety and Operating Committee or Site Vice President.

i. Deleted.

j. Deleted.

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k. Review of every unplanned onsite release of radioactive material to the environs including the preparation of reports covering evaluation, recommendations and disposition of the corrective action to prevent recurrence and the forwarding of these reports to the Vice President-Nuclear Operations and the Management Safety Review Committee.

l. Review changes to the PROCESS CONTROL PROGRAM and the OFFSITE DOSE CALCULATION MANUAL.

m. Review of the Fire Protection Program and implementing procedures and shall submit recommended changes to the Site Vice President.

AUTHORITY

6.5.1.7 The SNSOC shall:

a. Provide written approval or disapproval of items considered under 6.5.1.6(a) through (c) above. SNSOC approval shall be certified in writing by either the Manager - Station Operations and Maintenance or the Manager - Station Safety and Licensing.

b. Render determinations in writing with regard to whether or not each item considered under 6.5.1.6(a) through (e) above constitutes an unreviewed safety question.

c. Provide written notification within 24 hours to the Vice President - Nuclear Operations and the Management Safety Review Committee (MSRC) of disagreement between the SNSOC and the Site Vice President; however, the Site Vice President shall have responsibility for resolution of such disagreements pursuant to 6.1.1 above.

LA.6

RECORDS

6.5.1.8 The SNSOC shall maintain written minutes of each meeting and copies shall be provided to the Site Vice President, Vice President-Nuclear Operations and the MSRC.

6.5.2 MANAGEMENT SAFETY REVIEW COMMITTEE (MSRC)

FUNCTION

6.5.2.1 The MSRC shall function to provide independent review of designated activities in the areas of:

a. Station Operations
b. Maintenance
c. Reactivity Management
d. Engineering
e. Chemistry and Radiochemistry
f. Radiological Safety
g. Quality Assurance Practices
h. Emergency Preparedness

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(LA.6)

COMPOSITION

6.5.2.2 The MSRC shall be composed of the MSRC Chairman and a minimum of four MSRC members. The Chairman and all members of the MSRC shall have qualifications that meet the requirements of Section 4.7 of ANSI/ANS 3.1-1979 Rev. 1 (Draft).

ALTERNATES

6.5.2.3 All alternate members shall be appointed in writing by the MSRC Chairman to serve on a temporary basis; however, no more than two alternates shall participate as voting members in MSRC activities at any one time.

CONSULTANTS

6.5.2.4 Consultants should be utilized as determined by the MSRC Chairman to provide expert advice to the MSRC.

MEETING FREQUENCY

6.5.2.5 The MSRC shall meet at least once per calendar quarter.

QUORUM

6.5.2.6 The minimum quorum of the MSRC necessary for the performance of the MSRC review and audit functions of these Technical Specifications shall consist of the Chairman or his designated alternate and at least 50% of the MSRC members including alternates. No more than a minority of the quorum shall have line responsibility for operation of the unit.

REVIEW

6.5.2.7 The MSRC shall be responsible for the review of:

a. Safety evaluations as programmatically discussed in the Updated Final Safety Analysis Report for 1) changes to procedures, equipment or systems and 2) tests or experiments completed under the provision of Section 50.59, 10 CFR, to assess the effectiveness of the safety evaluation program and to verify that the reviewed actions did not constitute an unreviewed safety question.

b. Proposed changes to procedures, equipment or systems which involve an unreviewed safety question as defined in Section 50.59, 10 CFR.

c. Proposed tests or experiments which involve an unreviewed safety question as defined in Section 50.59, 10 CFR.

d. Proposed changes to Technical Specifications or this Operating License.

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e. Violations of codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures or instructions having nuclear safety significance.

f. Significant operating abnormalities or deviations from normal and expected performance of unit equipment that affect nuclear safety.

g. Events requiring written notification to the Commission.

h. All recognized indications of an unanticipated deficiency in some aspect of design or operation of structures, systems, or components that could affect nuclear safety.

i. A representative sample of reports and meetings minutes of the SNSOC.

AUDITS

6.5.2.8 Audits of facility activities shall be performed under the cognizance of the MSRC. These audits shall encompass: LA.6

a. The conformance of facility operation to provisions contained within the Technical Specifications and applicable license conditions.

b. The performance, training and qualifications of the entire facility staff.

c. The results of actions taken to correct deficiencies occurring in facility equipment, structures, systems or method of operation that affect nuclear safety.

d. The performance of activities required by the Operational Quality Assurance Program to meet the criteria of Appendix "B", 10 CFR 50.

e. Any other area of facility operation considered appropriate by the MSRC or the Vice President - Nuclear Operations.

f. The Fire Protection Program and implementing procedures.

g. An independent fire protection and loss prevention inspection and audit shall be performed utilizing an outside qualified fire consultant.

h. The Radiological Environmental Monitoring Program and the results thereof.

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i. ~~The OFFSITE DOSE CALCULATION MANUAL and implementing procedures.~~

j. ~~The PROCESS CONTROL PROGRAM and implementing procedures for processing and packaging of radioactive wastes.~~

~~AUTHORITY~~

~~6.5.2.9 The MSRC shall report to and advise the Senior Vice President - Nuclear on those areas of responsibility specified in Sections 6.5.2.7 and 6.5.2.8.~~

~~RECORDS~~

LA.6

~~6.5.2.10 Records of MSRC activities shall be prepared, approved and distributed as indicated below:~~

a. ~~Minutes of each MSRC meeting shall be prepared, approved and forwarded to the Senior Vice President - Nuclear within 14 days of each meeting.~~

b. ~~Reports of reviews with safety significant findings encompassed by Section 6.5.2.7 above, shall be prepared, approved and forwarded to the Senior Vice President - Nuclear within 14 days following completion of the review.~~

c. ~~Audit reports encompassed by Section 6.5.2.8 above, shall be forwarded to the Senior Vice President - Nuclear and to the management positions responsible for the areas audited within 30 days after completion of the audit by the auditing organization.~~

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See ITS Chapter 5.0

6.6 REPORTABLE EVENT ACTION

6.6.1 The following actions shall be taken for REPORTABLE EVENTS:

a. The Commission shall be notified and a report submitted pursuant to the requirements of Section 50.73 to 10 CFR Part 50, and

b. Each REPORTABLE EVENT shall be reviewed by the SNSOC and the results of this review shall be submitted to the Vice President-Nuclear Operations and the MSRC.

6.7 SAFETY LIMIT VIOLATION

2.1.1
2.2.1

6.7.1 The following actions shall be taken in the event a Safety Limit is violated:

a. The facility shall be placed in at least HOT STANDBY within one hour.

L.1

b. ~~The NRC Operations Center shall be notified by telephone as soon as possible and in all cases within one hour. The Vice President-Nuclear Operations and MSRC shall be notified within 24 hours.~~

c. ~~A Safety Limit Violation Report shall be prepared. The report shall be reviewed by the SNSOC. This report shall describe (1) applicable circumstances preceding the violation, (2) effects of the violation upon facility components, systems or structures, and (3) corrective action taken to prevent recurrence.~~

d. ~~The Safety Limit Violation Report shall be submitted to the Commission, the Vice President-Nuclear Operations and the MSRC within 14 days of the violation.~~

See ITS Chapter 5.0

6.8 PROCEDURES AND PROGRAMS

6.8.1 Written procedures shall be established, implemented and maintained covering the activities referenced below:

a. The applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, Revision 2, February 1978.

b. Refueling operations.

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6.6 REPORTABLE EVENT ACTION

6.6.1 The following actions shall be taken for REPORTABLE EVENTS:

a. The Commission shall be notified and a report submitted pursuant to the requirements of Section 50.73 to 10 CFR Part 50, and (A.1)

b. Each REPORTABLE EVENT shall be reviewed by the SNSOC and the results of this review shall be submitted to the Vice President-Nuclear Operations and the MSRC. (LA.6)

6.7 SAFETY LIMIT VIOLATION

6.7.1 The following actions shall be taken in the event a Safety Limit is violated:

a. The facility shall be placed in at least HOT STANDBY within one hour.

b. The NRC Operations Center shall be notified by telephone as soon as possible and in all cases within one hour. The Vice President-Nuclear Operations and MSRC shall be notified within 24 hours. (See ITS 2.0)

c. A Safety Limit Violation Report shall be prepared. The report shall be reviewed by the SNSOC. This report shall describe (1) applicable circumstances preceding the violation, (2) effects of the violation upon facility components, systems or structures, and (3) corrective action taken to prevent recurrence.

d. The Safety Limit Violation Report shall be submitted to the Commission, the Vice President-Nuclear Operations and the MSRC within 14 days of the violation.

6.8 PROCEDURES AND PROGRAMS

5.4.1 6.8.1 Written procedures shall be established, implemented and maintained covering the activities referenced below:

5.4.1.a a. The applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, Revision 2, February 1978.

b. Refueling operations. (A.3)

Insert proposed ITS 5.4.1.b (M.2)

Insert proposed ITS 5.4.1.e (M.3)

A.1

ITS 5.0

ITS

c. Surveillance and test activities of safety related equipment. A.3

d. Security Plan implementation. A.4

e. Emergency Plan implementation.

5.4.1.d f. Fire Protection Program implementation.

g. PROCESS CONTROL PROGRAM implementation. L.32

5.5.1 h. OFFSITE DOSE CALCULATION MANUAL implementation.

5.4.1.c i. Quality Assurance Program for effluent and environmental monitoring, using the guidance in Regulatory Guide 1.21, Revision 1, June 1974 and Regulatory Guide 4.1, Revision 1, April 1975. LA.1

L.30

6.8.2 Each new procedure of 6.8.1 above, except 6.8.1.d, 6.8.1.e, and 6.8.1.f shall be reviewed and approved by the SNSOC prior to implementation as set forth in administrative procedures. LA.6

Procedures of 6.8.1.d, 6.8.1.e, and 6.8.1.f shall be reviewed and approved as set forth in the facility's Security Plan, Emergency Plan, and section 6.5.1.6.m of the Technical Specifications, respectively. L.30

6.8.3 Procedure changes that require a safety evaluation shall also be reviewed and approved by SNSOC. All other changes shall be independently reviewed and approved as programmatically discussed in the Updated Final Safety Analysis Report. LA.6 L.30

6.8.4 The following programs shall be established, implemented, and maintained:

5.5.2 a. Primary Coolant Sources Outside Containment

A program $\boxed{\text{to reduce}}$ leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. The systems include the recirculation spray, safety injection, chemical and volume control, gas stripper, and hydrogen recombiners. The program shall include the following: L.12

provides controls to minimize

(i) Preventive maintenance and periodic visual inspection requirements, and

(ii) Integrated leak test requirements for each system at refueling cycle intervals or less.

(A.1)

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b. In-Plant Radiation Monitoring

A program which will ensure the capability to accurately determine the airborne iodine concentration in vital areas under accident conditions. This program shall include the following: LA.3

(i) Training of personnel,

(ii) Procedures for monitoring, and

(iii) Provisions for maintenance of sampling and analysis equipment.

5.5.9 c. Secondary Water Chemistry

A program for monitoring of secondary water chemistry to inhibit steam generator tube degradation. This program shall include:

(i) Identification of a sampling schedule for the critical variables and control points for these variables,

(ii) Identification of the procedures used to measure the values of the critical variables,

(iii) Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser inleakage,

(iv) Procedures for the recording and management of data,

(v) Procedures defining corrective actions for all control point chemistry conditions, and A.35

off

(vi) A procedure identifying (a) the authority responsible for the interpretation of the data, and (b) the sequence and timing of administrative events required to initiate corrective action.

5.5.3 d. Post-Accident Sampling

A program which will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere samples under accident conditions. The program shall include the following:

(i) Training of personnel,

(ii) Procedures for sampling and analysis,

(iii) Provisions for maintenance of sampling and analysis equipment.

5.5.4 e. Radioactive Effluent Controls Program

A program shall be provided conforming with 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

5.5.4.a 1) Limitations on the operability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM,

5.5.4.b 2) Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to ten times 10 CFR ~~Part 20~~, Appendix B, Table 2, Column 2, 20.1001 - 20.2402 (A.30)

5.5.4.c 3) Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.1302 and with the methodology and parameters in the ODCM,

5.5.4.d 4) Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50,

5.5.4.e 5) Determination of cumulative ~~and projected~~ dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days, (L.31)

5.5.4.f 6) Limitations on the operability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual dose or dose commitment conforming to Appendix I to 10 CFR Part 50,

5.5.4.g 7) Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas at or beyond the SITE BOUNDARY shall be limited to the following:

a) For noble gases: Less than or equal to a dose rate of 500 mrem/yr. to the total body and less than or equal to a dose rate of 3000 mrem/yr. to the skin, and

b) For Iodine-131, Iodine-133, Tritium, and all radionuclides in particulate form with half-lives greater than 8 days: Less than or equal to a dose rate of 1500 mrem/yr. to any organ.

Determination of projected dose contributions from radioactive effluents in accordance with the methodology in the ODCM at least every 31 days.

A.1

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5.5.4.h 8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,

5.5.4.i 9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR 50,

5.5.4.j 10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

INSERT → L.25

~~f. Radiological Environmental Monitoring Program~~

~~A program shall be provided to monitor the radiation and radio nuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:~~

~~1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,~~

~~2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and~~

~~3) Participation in a Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.~~

LA.10

~~g. Configuration Risk Management Program~~

~~The Configuration Risk Management Program (CRMP) provides a proceduralized risk-informed assessment to manage the risk associated with equipment inoperability. The program applies to technical specification structures, systems, or components for which a risk-informed allowed outage time has been granted. The program shall include the following elements:~~

~~1) Provisions for the control and implementation of a Level 1, at power, internal events, PRA-informed methodology. The assessment shall be capable of evaluating the applicable plant configuration.~~

~~2) Provisions for performing an assessment prior to entering the LCO Action Statement for planned activities.~~

LA 8

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Configuration Risk Management Program (continued)

3) Provisions for performing an assessment after entering the LCO Action Statement for unplanned entry into the LCO Action Statement.

4) Provisions for assessing the need for additional actions after the discovery of additional equipment out of service conditions while in the LCO Action Statement.

5) Provisions for considering other applicable risk significant contributors such as Level 2 issue and external events, qualitatively or quantitatively.

Current risk-informed action statements include: Action 3.8.1.1.b; 3.4.3.2.A.2; 3.3.1.1; 3.3.2.1

LA.8

6.9 REPORTING REQUIREMENTS

The following reports shall be submitted in accordance with 10CFR 50.4

ROUTINE REPORTS

5.6 6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the Director of the Regional Office of Inspection and Enforcement unless otherwise noted.

A.24

STARTUP REPORTS

6.9.1.1 A summary report of plant startup and power escalation testing shall be submitted following (1) receipt of an operating license, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the plant.

6.9.1.2 The startup report shall address each of the tests identified in the FSAR and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details requested in license conditions based on other commitments shall be included in this report.

L.7

6.9.1.3 Startup reports shall be submitted within (1) 90 days following completion of the startup test program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of startup test program, and resumption or commencement of commercial power operation), supplementary reports shall be submitted at least every three months until all three events have been completed.

ADMINISTRATIVE CONTROLS

ANNUAL REPORTS[1] for the Steam Generator Tube Inspection Report and by April 30 of each year for the Occupational Radiation Exposure Report L.15

6.9.1.4 Annual reports covering the activities of the unit as described below for the previous calendar year shall be submitted prior to March 1 of each year. ~~The initial report shall be submitted prior to March 1 of the year following initial criticality.~~ A.25

collective deep dose equivalent (reported in person-rem)

6.9.1.5 Reports required on an annual basis shall include:

for whom monitoring was performed — an annual deep dose equivalent

5.6.1 a. A tabulation on an annual basis of the number of station, utility, and other personnel (including contractors) receiving exposures greater than 100 mrem/yr and their associated man-rem exposure according to work and job functions,[2] e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignments to various duty functions may be estimated based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20 percent of the individual total dose need not be accounted for. In the aggregate, at least 80 percent of the total whole body dose received from external sources should be assigned to specific major work functions. M.14 L.21 M.14

electronic dosimeter

deep dose equivalent

5.6.7 b. The complete results of the steam generator tube inservice inspections performed during the report period (Reference Specification 4.4.5.5.b.) 5.6.7 A.20

~~c. The results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.4.8. The following information shall be included: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while limit was exceeded and results of one analysis after the radioiodine activity was reduced to less than limit. Each result should include date and time of sampling and the radioiodine concentrations; (3) Clean-up system flow history starting 48 hours prior to the first sample in which the limit was exceeded; (4) Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as function of time for the duration of the specific activity above the steady-state level; and (5) The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.~~ L.2

Note: 5.6.1, 5.6.2, 5.6.3 [1] A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station.

5.6.1 [2] This tabulation supplements the requirements of §20.2206 of 10 CFR Part 20.

(A.1) ITS 5.0

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5.6.4

MONTHLY OPERATING REPORT

L.26

~~6.9.1.6~~ Routine reports of operating statistics and shutdown experience, including documentation of all challenges to the Reactor Coolant System PORVs or safety valves, shall be submitted on a monthly basis to the Director, Office of Management and Program Analysis, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, with a copy to the Regional Office of Inspection and Enforcement, no later than the 15th of each month following the calendar month covered by the report.

A.14

5.6.5 CORE OPERATING LIMITS REPORT

5.6.5.a 6.9.1.7.a Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle for the following:

1. Safety Limits,
2. Shutdown Margin,

1. Moderator Temperature Coefficient ~~BOC and EOC limits, and 300 ppm and 60 ppm surveillance limits for Specification 3/4.1.1.4,~~
2. Shutdown Bank Insertion Limit ~~for Specification 3/4.1.3.5,~~
3. Control Bank Insertion Limits ~~for Specification 3/4.1.3.6,~~
4. Axial Flux Difference limits ~~for Specification 3/4.2.1,~~
5. Heat Flux Hot Channel Factor, ~~K(Z), N(Z) for Specification 3/4.2.2, and~~
6. ~~Nuclear Enthalpy Rise~~ Hot Channel Factor, and Power Factor Multiplier, ~~for Specification 3/4.2.3.~~

9. Reactor Trip System Instrumentation - OTΔT and OPΔT Trip Parameters,
10. RCS Pressure, Temperature, and Flow DNB limits, and
11. Boron Concentration

A.37

5.6.5.b 6.9.1.7.b The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC ~~as identified in 6.9.1.7.e~~ specifically those described in the following documents:

5.6.5.c 6.9.1.7.c The core operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met.

5.6.5.d 6.9.1.7.d The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC ~~Document Control Desk with copies to the Regional Administrator and Resident Inspector.~~ A.14

6.9.1.7.e REFERENCES

5.6.5.b

1. VEP-FRD-42~~, Rev. 1-A,~~ "Reload Nuclear Design Methodology," ~~September 1986~~. LA.9

~~(Methodology for LCO 3.1.1.4 - Moderator Temperature Coefficient, LCO 3.1.3.5 - Shutdown Bank Insertion Limit, LCO 3.1.3.6 - Control Bank Insertion Limits, LCO 3.2.2 - Heat Flux Hot Channel Factor, LCO 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor).~~ LA.9

5.6.5.b

2a. WCAP-9220-P-A, Rev. 1, "WESTINGHOUSE ECCS EVALUATION MODEL - 1981 VERSION", February 1982 (W Proprietary).

(Methodology for LCO 3.2.2 - Heat Flux Hot Channel Factor).

LA.9

2b. WCAP-9561-P-A, ADD. 3, Rev. 1, "BART A-1: A COMPUTER CODE FOR THE BEST ESTIMATE ANALYSIS OF REFLOOD TRANSIENTS - SPECIAL REPORT: THIMBLE MODELING IN W ECCS EVALUATION MODEL", JULY 1986, (W Proprietary).

(Methodology for LCO 3.2.2 - Heat Flux Hot Channel Factor).

2c. WCAP-10266-P-A, Rev. 2, "The 1981 Version of the Westinghouse ECCS Evaluation Model Using the BASH Code", March 1987 (W Proprietary).

(Methodology for LCO 3.2.2 - Heat Flux Hot Channel Factor).

2d. WCAP-10054-P-A, "Westinghouse Small Break ECCS Evaluation Model Using the NOTRUMP Code," August 1985 (W Proprietary).

(Methodology for LCO 3.2.2 - Heat Flux Hot Channel Factor).

2e. WCAP-10079-P-A, "NOTRUMP, A Nodal Transient Small Break and General Network Code", August 1985 (W Proprietary).

(Methodology for LCO 3.2.2 - Heat Flux Hot Channel Factor).

2f. WCAP-12610, "VANTAGE+ FUEL ASSEMBLY REFERENCE CORE REPORT," June 1990 (W Proprietary). A.27

(Methodology for LCO 3.2.2 - Heat Flux Hot Channel Factor.)

3a. VEP-NE-2-A, "Statistical DNBR Evaluation Methodology", June 1987.

(Methodology for LCO 3.2.3, Nuclear Enthalpy Rise Hot Channel Factor).

3b. VEP-NE-3-A, "Qualification of the WRB-1 CHF Correlation in the Virginia Power COBRA Code", July 1990.

(Methodology for LCO 3.2.3 Nuclear Enthalpy Rise Hot Channel Factor).

4. VEP-NE-1-A, "Vepco Relaxed Power Distribution Control Methodology and Associated FQ Surveillance Technical Specifications," March 1986.

(Methodology for LCO 3.2.2 - Heat Flux Hot Channel Factor and LCO 3.2.1 - Axial Flux Difference.)

Insert proposed ITS 5.6.6 →

M.9

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5.0 ADMINISTRATIVE CONTROLS (Continued)

5.6.2 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT*

6.9.1.8 The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted before May 1 of each year. The report shall include summaries, interpretations, and analysis of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in (1) the ODCM and (2) Sections IV.B.2, IV.B.3.and IV.C of Appendix I to 10 CFR Part 50.

INSERT →

(M.8)

Note 5.6.2 * A single submittal may be made for a multiple unit station.

5.6.3 ANNUAL RADIOLOGICAL EFFLUENT RELEASE REPORT*

6.9.1.9 The Annual Radioactive Effluent Release Report covering the operation of the unit during the previous calendar year shall be submitted by May 1 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be (1) consistent with the objectives outlined in the ODCM and PCP and (2) in conformance with 10 CFR 50.36a and Section IV.B.1 of Appendix I to 10 CFR Part 50.

shall M.10

Note 5.6.3 * A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

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SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Regional Administrator, Region II, within the time period specified for each report. These reports shall be submitted pursuant to the requirement of the applicable specification:

a. Inservice Inspection Reviews, Specification 4.0.5, shall be reported within 90 days of completion.

b. MODERATOR TEMPERATURE COEFFICIENT. Specification 3.1.1.4.

c. RADIATION MONITORING INSTRUMENTATION. Specification 3.3.3.1, Table 3.3-6, Action 35.

d. SEISMIC INSTRUMENTATION. Specifications 3.3.3.3 and 4.3.3.3.2.

e. METEOROLOGICAL INSTRUMENTATION. Specification 3.3.3.4.

f. Deleted.

g. LOOSE PARTS MONITORING SYSTEMS. Specification 3.3.3.9.

h. Deleted.

i. LOW-TEMPERATURE OVERPRESSURE PROTECTION. Specification 3.4.9.3.

j. EMERGENCY CORE COOLING SYSTEMS. Specification 3.5.2 and 3.5.3.

k. SETTLEMENT OF CLASS 1 STRUCTURES. Specification 3.7.12.

l. GROUND WATER LEVEL - SERVICE WATER RESERVOIR. Specification 3.7.13.

m. Deleted.

n. RADIOACTIVE EFFLUENTS. As required by the ODCM.

o. RADIOLOGICAL ENVIRONMENTAL MONITORING. As required by the ODCM.

p. SEALED SOURCE CONTAMINATION. Specification 4.7.11.1.3.

q. REACTOR COOLANT SYSTEM STRUCTURAL INTEGRITY. Specification 4.4.10. For any abnormal degradation of the structural integrity of the reactor vessel or the Reactor Coolant System pressure boundary detected during the performance of Specification 4.4.10, an initial report shall be submitted within 10 days after detection and a detailed report submitted within 90 days after the completion of Specification 4.4.10.

(A.33)

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~~I. Deleted~~

A.33

~~6.10 RECORD RETENTION~~

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~~Section 6.10, "Record Retention," has been relocated to the Operational Quality Assurance Program.~~

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at 30 centimeters from the Radiation Source or from any Surface Penetrated by the Radiation

 A.31

6.11 RADIATION PROTECTION PROGRAM

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. A.8

or equivalent L.16

that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures M.4

6.12 HIGH RADIATION AREA

5.7.1.a
5.7.2.a

6.12.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.1601 of 10 CFR 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr 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*. Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following: A.31

5.7.1.b
5.7.2.b
5.7.1.d
5.7.1.d.1

a. A radiation monitoring device which continuously indicates the radiation dose rate in the area.

5.7.1.d.2
5.7.2.d.1

b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate level in the area has been established and personnel have been made knowledgeable of them. M.16

5.7.1.e
5.7.2.e

INSERT 1

5.7.1.d.4(i)
5.7.2.d.5(i)

INSERT 2

c. An individual qualified in radiation protection procedures who is equipped with a radiation dose rate monitoring device. This individual shall be responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the facility Health Physicist in the Radiation Work Permit. M.19

5.7.1.d.4(ii)
5.7.2.d.3(ii)

INSERT 3 L.28

5.7.2

6.12.2 The requirements of 6.12.1, above, shall also apply to each high radiation area in which the intensity of radiation is greater than 1000 mrem/hr, but less than 500 rads/hr at one meter from a radiation source or any surface through which radiation penetrates. In addition, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the Shift Supervisor on duty and/or the Plant Health Physicist. L.11

5.7.2.a.1

radiation protection

5.7.2.a.2

except for 6.12.1.a

Doors and gates shall remain locked except during periods of personnel or equipment entry or exit. A.17

M.17

radiation protection manager, or his or her designee

or continuously guarded L.23

at 30 centimeters from the Radiation Source or from any Surface Penetrated by the Radiation A.31

only 5.7.1.c

5.7.1.c
5.7.2.c

or personnel continuously escorted by such individuals may L.17

radiation protection

* Health Physics personnel shall be exempt from the RWP issuance requirement during the performance of their assigned radiation protection duties, provided they comply with approved radiation protection procedures for entry in high radiation areas. L.11 L.17

INSERT proposed 5.7.1.d.3 and 5.7.2.d.2 L.27

INSERT proposed 5.7.2.d.4 L.29

INSERT proposed 5.7.2.f L.13

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6.14 PROCESS CONTROL PROGRAM (PCP)

6.14.1 Changes to the PCP:

1. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.2.r. This documentation shall contain:

   a) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and

   b) A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.

2. Shall become effective after review and acceptance by the SNSOC and the approval of the Site Vice President.

L.32

A.1

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5.5.1 **6.15 OFFSITE DOSE CALCULATION MANUAL (ODCM)**

Changes to the ODCM:

5.5.1.a (2nd) a. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.2.r. This documentation shall contain: A.11

5.5.1.a.1 1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and

5.5.1.a.2 2) A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.

5.5.1.b (2nd) b. Shall become effective after review and acceptance by the SNSOC and the approval of the ~~Site Vice President~~ plant manager. LA.6 L.6

5.5.1.c c. Shall be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Annual Radioactive Effluent Release Report for the period of the report in which any change to the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (e.g., month/year) the change was implemented.

6.16 DELETED