ENCLOSURE 2

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN)
UNITS 1, 2, AND 3

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE TS-390
MARKED PAGES

I. AFFECTED PAGE LIST

The following pages have been revised and an 'X' has been placed in the right hand margin to indicate where changes occur. The affected page list is identical for both Unit 2 and Unit 3. Pages also affected in the Unit 1 TS are designated by the diamond (◆).

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II. MARKED PAGES

See attached.

SURVEILLANCE REQUIREMENTS

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1. Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP Function.

SURVEILLANCE		FREQUENCY
SR 3.3.8.1.1	Perform CHANNEL CALIBRATION.	184 days
SR 3.3.8.1.2	Perform CHANNEL CALIBRATION.	12 months
SR 3.3.8.1.3	Perform LOGIC SYSTEM FUNCTIONAL TEST.	18 24 months

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. (continued)	C.2	Suspend CORE ALTERATIONS.	Immediately
	AND		
	C.3	Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.1	Verify all secondary containment equipment hatches are closed and sealed.	31 days
SR 3.6.4.1.2	Verify each secondary containment access door is closed, except when the access opening is being used for entry and exit, then at least one door shall be closed.	31 days
SR 3.6.4.1.3	Verify two standby gas treatment (SGT) subsystems will draw down the secondary containment to ≥ 0.25 inch of vacuum water gauge in ≤ 120 seconds.	24 18 months on a STAGGERED TEST BASIS X
SR 3.6.4.1.4	Verify two SGT subsystems can maintain ≥ 0.25 inch of vacuum water gauge in the secondary containment at a flow rate ≤ 12,000 cfm.	24 18 months on a STAGGERED TEST BASIS X

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.2.1	Verify the isolation time of each power operated, automatic SCIV is within limits.	92 days
SR 3.6.4.2.2	Verify each automatic SCIV actuates to the isolation position on an actual or simulated actuation signal.	24 18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each SGT subsystem for ≥ 10 continuous hours with heaters operating.	31 days
SR 3.6.4.3.2	Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3	Verify each SGT subsystem actuates on an actual or simulated initiation signal.	24 18 months X
SR 3.6.4.3.4	Verify the SGT decay heat discharge dampers are in the correct position.	12 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	Verify the average water temperature of UHS is ≤ 95°F.	24 hours
SR 3.7.2.2	-------------------NOTE------------------- Isolation of flow to individual components does not render EECW System inoperable. -- Verify each EECW system manual and power operated valve in the flow paths servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	 31 days
SR 3.7.2.3	Verify each required EECW pump actuates on an actual or simulated initiation signal.	24 18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Operate each CREV subsystem for ≥ 10 continuous hours with the heaters operating.	31 days
SR 3.7.3.2	Perform required CREV filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.3.3	Verify each CREV subsystem actuates on an actual or simulated initiation signal.	24 18 months
SR 3.7.3.4	Verify each CREV subsystem can maintain a positive pressure of ≥ 0.125 inches water gauge relative to the outdoors during the pressurization mode of operation at a flow rate of ≥ 2700 cfm and ≤ 3300 cfm.	24 18 months on a STAGGERED TEST BASIS

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Verify each control room AC subsystem has the capability to remove the assumed heat load.	~~18~~ 24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.5	-------------------NOTE------------------- If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9. -- Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ 66.75 Hz; and b. Following load rejection, the steady state voltage recovers to ≥ 3940 V and ≤ 4400 V. c. Following load rejection, the steady state frequency recovers to ≥ 58.8 Hz and ≤ 61.2 Hz.	24 18 months
SR 3.8.1.6	-------------------NOTE------------------- All DG starts may be preceded by an engine prelube period followed by a warmup period. -- Verify on an actual or simulated accident signal each DG auto-starts from standby condition.	24 18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.7	-------------------NOTE------------------- Momentary transients outside the load and power factor ranges do not invalidate this test. -- Verify each DG operating at a power factor ≤ 0.9 operates for ≥ 24 hours: a. For ≥ 2 hours loaded ≥ 2680 kW and ≤ 2805 kW; and b. For the remaining hours of the test loaded ≥ 2295 kW and ≤ 2550 kW.	24 18 months
SR 3.8.1.8	Verify interval between each timed load block is within the allowable values for each individual timer.	24 18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.9	-------------------NOTE------------------- All DG starts may be preceded by an engine prelube period. -- Verify, on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ECCS initiation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected emergency loads through individual timers, 3. achieves steady state voltage ≥ 3940 V and ≤ 4400 V, 4. achieves steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes.	24 18 months
SR 3.8.1.10	For required Unit 3 DGs, the SRs of Unit 3 Technical Specifications are applicable.	In accordance with applicable SRs.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is ≥ 248 V for each Unit and Shutdown Board battery and ≥ 124 V for each DG battery on float charge.	7 days
SR 3.8.4.2	-------------------NOTE------------------- Performance of SR 3.8.4.5 satisfies this SR. -- Verify each required battery charger charges its respective battery after the battery's 18 24 month service test.	24 18 months
SR 3.8.4.3	-------------------NOTES------------------- The modified performance discharge test in SR 3.8.4.4 may be performed in lieu of the service test in SR 3.8.4.3 once per 60 months. -- Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	24 18 months

(continued)

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

of the HEPA filters shows a penetration and system bypass $\leq$ 1.0% when tested in accordance with ANSI N510-1975 at the system flowrate specified below, ± 10%.

ESF Ventilation System	Flowrate (cfm)
SGT System	9000
CREV System	3000

24

This testing shall be performed 1) every 18 months, 2) after partial or complete replacement of HEPA filters, 3) after any structural maintenance on the system housing, or 4) following significant painting, fire, or chemical release in any ventilation zone communicating with the system.

b. Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass $\leq$ 1.0% when tested in accordance with ANSI N510-1975 at the system flowrate specified below, ± 10%.

ESF Ventilation System	Flowrate (cfm)
SGT System	9000
CREV System	3000

24

This testing shall be performed 1) every 18 months, 2) after partial or complete replacement of the charcoal adsorber bank, 3) after any structural maintenance on the system housing, or 4) following significant painting, fire, or chemical release in any ventilation zone communicating with the system.

c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, shows a methyl iodide efficiency $\geq$ 90% when tested in accordance with ASTM D3803-1989.

24

This testing shall be performed 1) every 18 months, 2) after every 720 hours of system operation, or 3) following significant painting, fire, or chemical release in any ventilation zone communicating with the system.

(continued)

24

5.5 Programs and Manuals

5.5.7 <u>Ventilation Filter Testing Program (VFTP)</u> (continued)

d. Once every 18 months demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers is less than the value specified below at the system flowrate specified below, ± 10%:

ESF Ventilation System	Delta P (inches water)	Flowrate (cfm)
SGT System	7	9000
CREV System	6	3000

24

e. Once every 18 months demonstrate that the heaters for the SGT System dissipate 40 kW ± 10% when tested in accordance with ANSI N510-1975.

5.5.8 <u>Explosive Gas and Storage Tank Radioactivity Monitoring Program</u>

This program provides controls for potentially explosive gas mixtures contained downstream of the offgas recombiners, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks.

The program shall include:

a. The limits for concentrations of hydrogen downstream of the offgas recombiners and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion); and

b. A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the liquid radwaste treatment system is less than the amount that would result in concentrations less than the limits of 10 CFR 20, Appendix B, Table 2, Column 2, at the nearest potable water supply and the nearest surface water supply in

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.7.5	Verify the SLC conditions satisfy the following equation: $$\frac{(\ C\ )}{(13\text{ wt. \%})}\ \frac{(\ Q\ )}{(86\text{ gpm})}\ \frac{(\ E\ )}{(19.8\text{ atom\%})} \geq 1$$ where, C = sodium pentaborate solution concentration (weight percent) Q = pump flow rate (gpm) E = Boron-10 enrichment (atom percent Boron-10)	31 days AND Once within 24 hours after water or boron is added to the solution.
SR 3.1.7.6	Verify each pump develops a flow rate ≥ 39 gpm at a discharge pressure ≥ 1275 psig.	24 18 months
SR 3.1.7.7	Verify flow through one SLC subsystem from pump into reactor pressure vessel.	24 18 months on a STAGGERED TEST BASIS
SR 3.1.7.8	Verify all piping between storage tank and pump suction is unblocked.	24 18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.7.9	Verify sodium pentaborate enrichment is within the limits established by SR 3.1.7.5 by calculating within 24 hours and verifying by analysis within 30 days.	24 18 months AND After addition to SLC tank
SR 3.1.7.10	Verify each SLC subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position, or can be aligned to the correct position.	31 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.8.1	-------------------NOTE------------------- Not required to be met on vent and drain valves closed during performance of SR 3.1.8.2. -- Verify each SDV vent and drain valve is open.	31 days
SR 3.1.8.2	Cycle each SDV vent and drain valve to the fully closed and fully open position.	92 days
SR 3.1.8.3	Verify each SDV vent and drain valve: a. Closes in $\leq$ 60 seconds after receipt of an actual or simulated scram signal; and b. Opens when the actual or simulated scram signal is reset.	24 ~~18~~ months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.10	Perform CHANNEL CALIBRATION.	184 days
SR 3.3.1.1.11	(Deleted)	
SR 3.3.1.1.12	Perform CHANNEL FUNCTIONAL TEST.	~~18~~ 24 months
SR 3.3.1.1.13	-----------------NOTES----------------- 1. Neutron detectors are excluded. 2. For Function 2.a, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. --------------------------------------- Perform CHANNEL CALIBRATION.	18 months
SR 3.3.1.1.14	Perform LOGIC SYSTEM FUNCTIONAL TEST.	~~18~~ 24 months
SR 3.3.1.1.15	Verify Turbine Stop Valve – Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure – Low Functions are not bypassed when THERMAL POWER is ≥ 30% RTP.	18 months
SR 3.3.1.1.16	-----------------NOTE----------------- For Function 2.a, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. --------------------------------------- Perform CHANNEL FUNCTIONAL TEST.	184 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.1.2	------------------NOTE------------------ Not required to be performed until 1 hour after any control rod is withdrawn at ≤ 10% RTP in MODE 2. -- Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.2.1.3	------------------NOTE------------------ Not required to be performed until 1 hour after THERMAL POWER is ≤ 10% RTP in MODE 1. -- Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.2.1.4	------------------NOTE------------------ Neutron detectors are excluded. -- Perform CHANNEL CALIBRATION.	18 months
SR 3.3.2.1.5	Verify the RWM is not bypassed when THERMAL POWER is ≤ 10% RTP.	18 months
SR 3.3.2.1.6	------------------NOTE------------------ Not required to be performed until 1 hour after reactor mode switch is in the shutdown position. -- Perform CHANNEL FUNCTIONAL TEST.	~~18~~ 24 months

(continued)

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SURVEILLANCE REQUIREMENTS

------------------------------------NOTE------------------------------------
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided feedwater and main turbine high water level trip capability is maintained.

SURVEILLANCE		FREQUENCY
SR 3.3.2.2.1	Perform CHANNEL CHECK.	24 hours
SR 3.3.2.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.2.2.3	Perform CHANNEL CALIBRATION. The Allowable Value shall be ≤ 586 inches above vessel zero.	18 months
SR 3.3.2.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST including valve actuation.	24 18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.3.2.1	Verify each required control circuit and transfer switch is capable of performing the intended function.	~~18~~ 24 months
SR 3.3.3.2.2	Perform CHANNEL CALIBRATION for the Suppression Pool Water Level Function.	184 days
SR 3.3.3.2.3	Perform CHANNEL CALIBRATION for each required instrumentation channel except for the Suppression Pool Water Level Function.	18 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.3	Perform CHANNEL CALIBRATION. The Allowable Values shall be: TSV − Closure: ≤ 10% closed; and TCV Fast Closure, Trip Oil Pressure − Low: ≥ 550 psig.	18 months
SR 3.3.4.1.4	Perform LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation.	24 18 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.4.2.3	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Reactor Vessel Water Level — Low Low, Level 2: $\geq$ 471.52 inches above vessel zero; and b. Reactor Steam Dome Pressure — High: $\leq$ 1146.5 psig.	18 months
SR 3.3.4.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation.	24 18 months

SURVEILLANCE REQUIREMENTS

-----NOTES-----

1. Refer to Table 3.3.5.1-1 to determine which SRs apply for each ECCS Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Functions 3.c and 3.f; and (b) for up to 6 hours for Functions other than 3.c and 3.f provided the associated Function or the redundant Function maintains ECCS initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.1.1	Perform CHANNEL CHECK.	24 hours
SR 3.3.5.1.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.5.1.3	Perform CHANNEL CALIBRATION.	92 days
SR 3.3.5.1.4	Perform CHANNEL CALIBRATION.	184 days
SR 3.3.5.1.5	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.5.1.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	~~18~~ 24 months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition B or C not met.	D.1 Declare RCIC System inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

------------------------------------NOTES------------------------------------

1. Refer to Table 3.3.5.2-1 to determine which SRs apply for each RCIC Function.
2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Function 2 and (b) for up to 6 hours for Function 1 provided the associated Function maintains RCIC initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.2.1	Perform CHANNEL CHECK.	24 hours
SR 3.3.5.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.5.2.3	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.5.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 18 months

SURVEILLANCE REQUIREMENTS

------------------------------------NOTES------------------------------------

1. Refer to Table 3.3.6.1-1 to determine which SRs apply for each Primary Containment Isolation Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains isolation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.6.1.1	Perform CHANNEL CHECK.	24 hours
SR 3.3.6.1.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.6.1.3	Perform CHANNEL CALIBRATION.	92 days
SR 3.3.6.1.4	Perform CHANNEL CALIBRATION.	122 days
SR 3.3.6.1.5	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.6.1.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 18 months

SURVEILLANCE REQUIREMENTS

NOTES

1. Refer to Table 3.3.6.2-1 to determine which SRs apply for each Secondary Containment Isolation Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains secondary containment isolation capability.

3. For Functions 3 and 4, when a channel is placed in an inoperable status solely for performance of a CHANNEL CALIBRATION or maintenance, entry into associated Conditions and Required Actions may be delayed for up to 24 hours provided the downscale trip of the inoperable channel is placed in the tripped condition.

SURVEILLANCE		FREQUENCY
SR 3.3.6.2.1	Perform CHANNEL CHECK.	24 hours
SR 3.3.6.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.6.2.3	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.6.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 18 months

SURVEILLANCE REQUIREMENTS

----------------------------------NOTES----------------------------------

1. Refer to Table 3.3.7.1-1 to determine which SRs apply for each CREV Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains CREV initiation capability.

3. For Functions 3 and 4, when a channel is placed in an inoperable status solely for the performance of a CHANNEL CALIBRATION or maintenance, entry into the associated Conditions and Required Actions may be delayed for up to 24 hours provided the downscale trip of the inoperable channel is placed in the trip condition.

SURVEILLANCE		FREQUENCY
SR 3.3.7.1.1	Perform CHANNEL CHECK.	24 hours
SR 3.3.7.1.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.7.1.3	Perform CHANNEL CALIBRATION.	92 days
SR 3.3.7.1.4	Perform LOGIC SYSTEM FUNCTIONAL TEST.	184 days
SR 3.3.7.1.5	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.7.1.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 18 months

X

SURVEILLANCE REQUIREMENTS

-----NOTES-----

1. Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP Function.

SURVEILLANCE		FREQUENCY
SR 3.3.8.1.1	Perform CHANNEL CALIBRATION.	184 days
SR 3.3.8.1.2	Perform CHANNEL CALIBRATION.	12 months
SR 3.3.8.1.3	Perform LOGIC SYSTEM FUNCTIONAL TEST.	~~18~~ 24 months

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Required Action and associated Completion Time of Condition A or B not met in MODE 4 or 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies.	D.1	Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.8.2.1	Perform CHANNEL FUNCTIONAL TEST.	184 days
SR 3.3.8.2.2	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Overvoltage ≤ 132 V, with time delay set to ≤ 4 seconds. b. Undervoltage ≥ 108.5 V, with time delay set to ≤ 4 seconds. c. Underfrequency ≥ 56 Hz, with time delay set to ≤ 4 seconds.	184 days
SR 3.3.8.2.3	Perform a system functional test.	24 18 months

SURVEILLANCE		FREQUENCY
SR 3.4.3.2	------------------NOTE------------------ Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -- Verify each required S/RV opens when manually actuated.	24 18 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.7	-------------------NOTE------------------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -- Verify, with reactor pressure ≤ 1010 and ≥ 920 psig, the HPCI pump can develop a flow rate ≥ 5000 gpm against a system head corresponding to reactor pressure.	92 days
SR 3.5.1.8	-------------------NOTE------------------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -- Verify, with reactor pressure ≤ 165 psig, the HPCI pump can develop a flow rate ≥ 5000 gpm against a system head corresponding to reactor pressure.	~~18~~ 24 months X
SR 3.5.1.9	-------------------NOTE------------------- Vessel injection/spray may be excluded. -- Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.	~~18~~ 24 months X

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.10	------------------NOTE------------------ Valve actuation may be excluded. -- Verify the ADS actuates on an actual or simulated automatic initiation signal.	24 18 months
SR 3.5.1.11	------------------NOTE------------------ Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -- Verify each ADS valve opens when manually actuated.	24 18 months
SR 3.5.1.12	Verify automatic transfer of the power supply from the normal source to the alternate source for each LPCI subsystem inboard injection valve and each recirculation pump discharge valve.	24 18 months

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.5.2.5	-------------------NOTE------------------- Vessel injection/spray may be excluded. -- Verify each required ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.	24 ~~18~~ months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.3.1	Verify the RCIC System piping is filled with water from the pump discharge valve to the injection valve.	31 days
SR 3.5.3.2	Verify each RCIC System manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.5.3.3	------------------NOTE------------------ Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -- Verify, with reactor pressure ≤ 1010 psig and ≥ 920 psig, the RCIC pump can develop a flow rate ≥ 600 gpm against a system head corresponding to reactor pressure.	 92 days
SR 3.5.3.4	------------------NOTE------------------ Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -- Verify, with reactor pressure ≤ 165 psig, the RCIC pump can develop a flow rate ≥ 600 gpm against a system head corresponding to reactor pressure.	 24 18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.3.5	------------------NOTE------------------ Vessel injection may be excluded. -- Verify the RCIC System actuates on an actual or simulated automatic initiation signal.	24 18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.1.1	Perform required visual examinations and leakage rate testing except for primary containment air lock testing, in accordance with the Primary Containment Leakage Rate Testing Program.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.1.2	Verify drywell to suppression chamber differential pressure does not decrease at a rate > 0.25 inch water gauge per minute over a 10 minute period at an initial differential pressure of 1 psid.	24 18 months X

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.7	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	24 18 months
SR 3.6.1.3.8	Verify each reactor instrumentation line EFCV actuates to the isolation position on a simulated instrument line break signal.	24 18 months
SR 3.6.1.3.9	Remove and test the explosive squib from each shear isolation valve of the TIP System.	24 18 months on a STAGGERED TEST BASIS
SR 3.6.1.3.10	Verify leakage rate through each MSIV is ≤ 11.5 scfh when tested at ≥ 25 psig.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.3.11	Verify combined leakage through water tested lines that penetrate primary containment are within the limits specified in the Primary Containment Leakage Rate Testing Program.	In accordance with the Primary Containment Leakage Rate Testing Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.6.1	------------------NOTES------------------ 1. Not required to be met for vacuum breakers that are open during Surveillances. 2. One drywell suppression chamber vacuum breaker may be nonfully closed so long as it is determined to be not more than 3° open as indicated by the position lights. --- Verify each vacuum breaker is closed.	14 days
SR 3.6.1.6.2	Perform a functional test of each required vacuum breaker.	In accordance with the Inservice Testing Program
SR 3.6.1.6.3	Verify the differential pressure required to open each vacuum breaker is ≤ 0.5 psid.	24 18 months

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2 Suspend CORE ALTERATIONS. AND C.3 Initiate action to suspend OPDRVs.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.1	Verify all secondary containment equipment hatches are closed and sealed.	31 days
SR 3.6.4.1.2	Verify each secondary containment access door is closed, except when the access opening is being used for entry and exit, then at least one door shall be closed.	31 days
SR 3.6.4.1.3	Verify two standby gas treatment (SGT) subsystems will draw down the secondary containment to ≥ 0.25 inch of vacuum water gauge in ≤ 120 seconds.	24 18 months on a STAGGERED TEST BASIS X
SR 3.6.4.1.4	Verify two SGT subsystems can maintain ≥ 0.25 inch of vacuum water gauge in the secondary containment at a flow rate ≤ 12,000 cfm.	24 18 months on a STAGGERED TEST BASIS X

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.2.1	Verify the isolation time of each power operated, automatic SCIV is within limits.	92 days
SR 3.6.4.2.2	Verify each automatic SCIV actuates to the isolation position on an actual or simulated actuation signal.	18 24 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each SGT subsystem for ≥ 10 continuous hours with heaters operating.	31 days
SR 3.6.4.3.2	Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3	Verify each SGT subsystem actuates on an actual or simulated initiation signal.	24 18 months
SR 3.6.4.3.4	Verify the SGT decay heat discharge dampers are in the correct position.	12 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	Verify the average water temperature of UHS is ≤ 95°F.	24 hours
SR 3.7.2.2	------------------NOTE------------------ Isolation of flow to individual components does not render EECW System inoperable. -- Verify each EECW system manual and power operated valve in the flow paths servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.2.3	Verify each required EECW pump actuates on an actual or simulated initiation signal.	~~18~~ 24 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Operate each CREV subsystem for ≥ 10 continuous hours with the heaters operating.	31 days
SR 3.7.3.2	Perform required CREV filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.3.3	Verify each CREV subsystem actuates on an actual or simulated initiation signal.	≥ 24 18 months
SR 3.7.3.4	Verify each CREV subsystem can maintain a positive pressure of ≥ 0.125 inches water gauge relative to the outdoors during the pressurization mode of operation at a flow rate of ≥ 2700 cfm and ≤ 3300 cfm.	≥ 24 18 months on a STAGGERED TEST BASIS

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.4.1	Verify each control room AC subsystem has the capability to remove the assumed heat load.	24 18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.5.1	Verify one complete cycle of each main turbine bypass valve.	31 days
SR 3.7.5.2	Perform a system functional test.	24 18 months X
SR 3.7.5.3	Verify the TURBINE BYPASS SYSTEM RESPONSE TIME is within limits.	24 18 months X

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.5	------------------NOTE------------------ If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9. -- Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ 66.75 Hz; and b. Following load rejection, the steady state voltage recovers to ≥ 3940 V and ≤ 4400 V. c. Following load rejection, the steady state frequency recovers to ≥ 58.8 Hz and ≤ 61.2 Hz.	24 18 months X
SR 3.8.1.6	------------------NOTE------------------ All DG starts may be preceded by an engine prelube period followed by a warmup period. -- Verify on an actual or simulated accident signal each DG auto-starts from standby condition.	24 18 months X

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.7	------------------NOTE------------------ Momentary transients outside the load and power factor ranges do not invalidate this test. -- Verify each DG operating at a power factor ≤ 0.9 operates for ≥ 24 hours: a. For ≥ 2 hours loaded ≥ 2680 kW and ≤ 2805 kW; and b. For the remaining hours of the test loaded ≥ 2295 kW and ≤ 2550 kW.	24 18 months X
SR 3.8.1.8	Verify Interval between each timed load block is within the allowable values for each individual timer.	24 18 months X

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.9	-------------------NOTE------------------- All DG starts may be preceded by an engine prelube period. -- Verify, on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ECCS initiation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected emergency loads through individual timers, 3. achieves steady state voltage ≥ 3940 V and ≤ 4400 V, 4. achieves steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes.	24 18 months X
SR 3.8.1.10	For required Unit 3 DGs, the SRs of Unit 3 Technical Specifications are applicable.	In accordance with applicable SRs.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is ≥ 248 V for each Unit and Shutdown Board battery and ≥ 124 V for each DG battery on float charge.	7 days
SR 3.8.4.2	-------------------NOTE------------------- Performance of SR 3.8.4.5 satisfies this SR. -- Verify each required battery charger charges its respective battery after the battery's 18 24 month service test.	18 24 months
SR 3.8.4.3	-------------------NOTES------------------- The modified performance discharge test in SR 3.8.4.4 may be performed in lieu of the service test in SR 3.8.4.3 once per 60 months. -- Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	18 24 months

(continued)

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

of the HEPA filters shows a penetration and system bypass ≤ 1.0% when tested in accordance with ANSI N510-1975 at the system flowrate specified below, ± 10%.

ESF Ventilation System	Flowrate (cfm)
SGT System	9000
CREV System	3000

24

This testing shall be performed 1) every 18 months, 2) after partial or complete replacement of HEPA filters, 3) after any structural maintenance on the system housing, or 4) following significant painting, fire, or chemical release in any ventilation zone communicating with the system.

b. Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass ≤ 1.0% when tested in accordance with ANSI N510-1975 at the system flowrate specified below, ± 10%.

ESF Ventilation System	Flowrate (cfm)
SGT System	9000
CREV System	3000

24

This testing shall be performed 1) every 18 months, 2) after partial or complete replacement of the charcoal adsorber bank, 3) after any structural maintenance on the system housing, or 4) following significant painting, fire, or chemical release in any ventilation zone communicating with the system.

c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, shows a methyl iodide efficiency ≥ 90% when tested in accordance with ASTM D3803-1989.

24

This testing shall be performed 1) every 18 months, 2) after every 720 hours of system operation, or 3) following significant painting, fire, or chemical release in any ventilation zone communicating with the system.

(continued)

24

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

d. Once every 18 months demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers is less than the value specified below at the system flowrate specified below, ± 10%:

ESF Ventilation System	Delta P (inches water)	Flowrate (cfm)
SGT System	7	9000
CREV System	6	3000

24

e. Once every 18 months demonstrate that the heaters for the SGT System dissipate 40 kW ± 10% when tested in accordance with ANSI N510-1975.

5.5.8 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained downstream of the offgas recombiners, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks.

The program shall include:

a. The limits for concentrations of hydrogen downstream of the offgas recombiners and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion); and

b. A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the liquid radwaste treatment system is less than the amount that would result in concentrations less than the limits of 10 CFR 20, Appendix B, Table 2, Column 2, at the nearest potable water supply and the nearest surface water supply in

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.7.5	Verify the SLC conditions satisfy the following equation: $\frac{(C)}{(13\text{ wt. }\%)}\frac{(Q)}{(86\text{ gpm})}\frac{(E)}{(19.8\text{ atom}\%)} \geq 1$ where, C = sodium pentaborate solution concentration (weight percent) Q = pump flow rate (gpm) E = Boron-10 enrichment (atom percent Boron-10)	31 days AND Once within 24 hours after water or boron is added to the solution.
SR 3.1.7.6	Verify each pump develops a flow rate ≥ 39 gpm at a discharge pressure ≥ 1275 psig.	24 18 months
SR 3.1.7.7	Verify flow through one SLC subsystem from pump into reactor pressure vessel.	24 18 months on a STAGGERED TEST BASIS
SR 3.1.7.8	Verify all piping between storage tank and pump suction is unblocked.	24 18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.7.9	Verify sodium pentaborate enrichment is within the limits established by SR 3.1.7.5 by calculating within 24 hours and verifying by analysis within 30 days.	24 18 months AND After addition to SLC tank
SR 3.1.7.10	Verify each SLC subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position, or can be aligned to the correct position.	31 days

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.1.8.1	-------------------NOTE------------------- Not required to be met on vent and drain valves closed during performance of SR 3.1.8.2. -- Verify each SDV vent and drain valve is open.	31 days
SR 3.1.8.2	Cycle each SDV vent and drain valve to the fully closed and fully open position.	92 days
SR 3.1.8.3	Verify each SDV vent and drain valve: a. Closes in ≤ 60 seconds after receipt of an actual or simulated scram signal; and b. Opens when the actual or simulated scram signal is reset.	24 18 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.10	Perform CHANNEL CALIBRATION.	184 days
SR 3.3.1.1.11	(Deleted)	
SR 3.3.1.1.12	Perform CHANNEL FUNCTIONAL TEST.	~~18~~ 24 months
SR 3.3.1.1.13	-----------------NOTES----------------- 1. Neutron detectors are excluded. 2. For Function 2.a, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. --------------------------------------- Perform CHANNEL CALIBRATION.	18 months
SR 3.3.1.1.14	Perform LOGIC SYSTEM FUNCTIONAL TEST.	~~18~~ 24 months
SR 3.3.1.1.15	Verify Turbine Stop Valve – Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure – Low Functions are not bypassed when THERMAL POWER is ≥ 30% RTP.	18 months
SR 3.3.1.1.16	----------------NOTE------------------ For Function 2.a, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. --------------------------------------- Perform CHANNEL FUNCTIONAL TEST	184 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.1.2	------------------NOTE------------------ Not required to be performed until 1 hour after any control rod is withdrawn at ≤ 10% RTP in MODE 2. --- Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.2.1.3	------------------NOTE------------------ Not required to be performed until 1 hour after THERMAL POWER is ≤ 10% RTP in MODE 1. --- Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.2.1.4	------------------NOTE------------------ Neutron detectors are excluded. --- Perform CHANNEL CALIBRATION.	18 months
SR 3.3.2.1.5	Verify the RWM is not bypassed when THERMAL POWER is ≤ 10% RTP.	18 months
SR 3.3.2.1.6	------------------NOTE------------------ Not required to be performed until 1 hour after reactor mode switch is in the shutdown position. --- Perform CHANNEL FUNCTIONAL TEST.	24 18 months

(continued)

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SURVEILLANCE REQUIREMENTS

---NOTE---

When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided feedwater and main turbine high water level trip capability is maintained.

SURVEILLANCE		FREQUENCY
SR 3.3.2.2.1	Perform CHANNEL CHECK.	24 hours
SR 3.3.2.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.2.2.3	Perform CHANNEL CALIBRATION. The Allowable Value shall be ≤ 586 inches above vessel zero.	18 months
SR 3.3.2.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST including valve actuation.	~~18~~ 24 months X

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.3.2.1	Verify each required control circuit and transfer switch is capable of performing the intended function.	24 18 months
SR 3.3.3.2.2	Perform CHANNEL CALIBRATION for the Suppression Pool Water Level Function.	18 months
SR 3.3.3.2.3	Perform CHANNEL CALIBRATION for each required instrumentation channel except for the Suppression Pool Water Level Function.	18 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.3	Perform CHANNEL CALIBRATION. The Allowable Values shall be: TSV – Closure: ≤ 10% closed; and TCV Fast Closure, Trip Oil Pressure – Low: ≥ 550 psig.	18 months
SR 3.3.4.1.4	Perform LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation.	~~18~~ 24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.4.2.3	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Reactor Vessel Water Level - Low Low, Level 2: $\geq$ 471.52 inches above vessel zero; and b. Reactor Steam Dome Pressure - High: $\leq$ 1146.5 psig.	18 months
SR 3.3.4.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation.	24 18 months X

SURVEILLANCE REQUIREMENTS

-----------------------------------NOTES-----------------------------------

1. Refer to Table 3.3.5.1-1 to determine which SRs apply for each ECCS Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Functions 3.c and 3.f; and (b) for up to 6 hours for Functions other than 3.c and 3.f provided the associated Function or the redundant Function maintains ECCS initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.1.1	Perform CHANNEL CHECK.	24 hours
SR 3.3.5.1.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.5.1.3	Perform CHANNEL CALIBRATION.	92 days
SR 3.3.5.1.4	Perform CHANNEL CALIBRATION.	184 days
SR 3.3.5.1.5	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.5.1.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 18 months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition B or C not met.	D.1 Declare RCIC System inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

-----------------------------------NOTES-----------------------------------

1. Refer to Table 3.3.5.2-1 to determine which SRs apply for each RCIC Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Function 2 and (b) for up to 6 hours for Function 1 provided the associated Function maintains RCIC initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.2.1	Perform CHANNEL CHECK.	24 hours
SR 3.3.5.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.5.2.3	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.5.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 18 months

SURVEILLANCE REQUIREMENTS

---NOTES---

1. Refer to Table 3.3.6.1-1 to determine which SRs apply for each Primary Containment Isolation Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains isolation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.6.1.1	Perform CHANNEL CHECK.	24 hours
SR 3.3.6.1.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.6.1.3	Perform CHANNEL CALIBRATION.	92 days
SR 3.3.6.1.4	Perform CHANNEL CALIBRATION.	122 days
SR 3.3.6.1.5	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.6.1.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	18 24 months

SURVEILLANCE REQUIREMENTS

------------------------------------NOTES------------------------------------

1. Refer to Table 3.3.6.2-1 to determine which SRs apply for each Secondary Containment Isolation Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains secondary containment isolation capability.

3. For Functions 3 and 4, when a channel is placed in an inoperable status solely for performance of a CHANNEL CALIBRATION or maintenance, entry into associated Conditions and Required Actions may be delayed for up to 24 hours provided the downscale trip of the inoperable channel is placed in the tripped condition.

SURVEILLANCE		FREQUENCY
SR 3.3.6.2.1	Perform CHANNEL CHECK.	24 hours
SR 3.3.6.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.6.2.3	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.6.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 18 months

SURVEILLANCE REQUIREMENTS

------------------------------------NOTES------------------------------------

1. Refer to Table 3.3.7.1-1 to determine which SRs apply for each CREV Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains CREV initiation capability.

3. For Functions 3 and 4, when a channel is placed in an inoperable status solely for the performance of a CHANNEL CALIBRATION or maintenance, entry into the associated Conditions and Required Actions may be delayed for up to 24 hours provided the downscale trip of the inoperable channel is placed in the trip condition.

SURVEILLANCE		FREQUENCY
SR 3.3.7.1.1	Perform CHANNEL CHECK.	24 hours
SR 3.3.7.1.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.7.1.3	Perform CHANNEL CALIBRATION.	92 days
SR 3.3.7.1.4	Perform LOGIC SYSTEM FUNCTIONAL TEST.	184 days
SR 3.3.7.1.5	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.7.1.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 18 months

SURVEILLANCE REQUIREMENTS

-----------------------------------NOTES-----------------------------------

1. Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP Function.

SURVEILLANCE		FREQUENCY
SR 3.3.8.1.1	Perform CHANNEL CALIBRATION.	184 days
SR 3.3.8.1.2	Perform CHANNEL CALIBRATION.	12 months
SR 3.3.8.1.3	Perform LOGIC SYSTEM FUNCTIONAL TEST.	~~18~~ 24 months

X

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A or B not met in MODE 4 or 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies.	D.1 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.8.2.1	Perform CHANNEL FUNCTIONAL TEST.	184 days
SR 3.3.8.2.2	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Overvoltage $\leq$ 132 V, with time delay set to $\leq$ 4 seconds. b. Undervoltage $\geq$ 108.5 V, with time delay set to $\leq$ 4 seconds. c. Underfrequency $\geq$ 56 Hz, with time delay set to $\leq$ 4 seconds.	184 days
SR 3.3.8.2.3	Perform a system functional test.	~~18~~ 24 months

SURVEILLANCE		FREQUENCY
SR 3.4.3.2	-------------------NOTE-------------------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -- Verify each required S/RV opens when manually actuated.	24 18 months

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.5.1.7	-------------------NOTE------------------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -- Verify, with reactor pressure ≤ 1010 and ≥ 920 psig, the HPCI pump can develop a flow rate ≥ 5000 gpm against a system head corresponding to reactor pressure.	92 days
SR 3.5.1.8	-------------------NOTE------------------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -- Verify, with reactor pressure ≤ 165 psig, the HPCI pump can develop a flow rate ≥ 5000 gpm against a system head corresponding to reactor pressure.	24 18 months
SR 3.5.1.9	-------------------NOTE------------------- Vessel injection/spray may be excluded. -- Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.	24 18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.10	-------------------NOTE------------------- Valve actuation may be excluded. -- Verify the ADS actuates on an actual or simulated automatic initiation signal.	~~18~~ 24 months
SR 3.5.1.11	-------------------NOTE------------------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -- Verify each ADS valve opens when manually actuated.	~~18~~ 24 months
SR 3.5.1.12	Verify automatic transfer of the power supply from the normal source to the alternate source for each LPCI subsystem inboard injection valve and each recirculation pump discharge valve.	~~18~~ 24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.5	-------------------NOTE------------------- Vessel injection/spray may be excluded. -- Verify each required ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.	24 18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.3.1	Verify the RCIC System piping is filled with water from the pump discharge valve to the injection valve.	31 days
SR 3.5.3.2	Verify each RCIC System manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.5.3.3	-------------------NOTE------------------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. --- Verify, with reactor pressure ≤ 1010 psig and ≥ 920 psig, the RCIC pump can develop a flow rate ≥ 600 gpm against a system head corresponding to reactor pressure.	92 days
SR 3.5.3.4	-------------------NOTE------------------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. --- Verify, with reactor pressure ≤ 165 psig, the RCIC pump can develop a flow rate ≥ 600 gpm against a system head corresponding to reactor pressure.	& 24 18 months

(continued)

2

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.3.5	---NOTE--- Vessel injection may be excluded. --- Verify the RCIC System actuates on an actual or simulated automatic initiation signal.	24 18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.1.1	Perform required visual examinations and leakage rate testing except for primary containment air lock testing, in accordance with the Primary Containment Leakage Rate Testing Program.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.1.2	Verify drywell to suppression chamber differential pressure does not decrease at a rate > 0.25 inch water gauge per minute over a 10 minute period at an initial differential pressure of 1 psid.	24 18 months X

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.7	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	24 18 months
SR 3.6.1.3.8	Verify each reactor instrumentation line EFCV actuates to the isolation position on a simulated instrument line break signal.	24 18 months
SR 3.6.1.3.9	Remove and test the explosive squib from each shear isolation valve of the TIP System.	24 18 months on a STAGGERED TEST BASIS
SR 3.6.1.3.10	Verify leakage rate through each MSIV is ≤ 11.5 scfh when tested at ≥ 25 psig.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.3.11	Verify combined leakage through water tested lines that penetrate primary containment are within the limits specified in the Primary Containment Leakage Rate Testing Program.	In accordance with the Primary Containment Leakage Rate Testing Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.6.1	------------------NOTES------------------ 1. Not required to be met for vacuum breakers that are open during Surveillances. 2. One drywell suppression chamber vacuum breaker may be nonfully closed so long as it is determined to be not more than 3° open as indicated by the position lights. --- Verify each vacuum breaker is closed.	14 days
SR 3.6.1.6.2	Perform a functional test of each required vacuum breaker.	In accordance with the Inservice Testing Program
SR 3.6.1.6.3	Verify the differential pressure required to open each vacuum breaker is ≤ 0.5 psid.	24 18 months X

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. (continued)	C.2	Suspend CORE ALTERATIONS.	Immediately
	AND		
	C.3	Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.1	Verify all secondary containment equipment hatches are closed and sealed.	31 days
SR 3.6.4.1.2	Verify each secondary containment access door is closed, except when the access opening is being used for entry and exit, then at least one door shall be closed.	31 days
SR 3.6.4.1.3	Verify two standby gas treatment (SGT) subsystems will draw down the secondary containment to ≥ 0.25 inch of vacuum water gauge in ≤ 120 seconds.	24 18 months on a STAGGERED TEST BASIS
SR 3.6.4.1.4	Verify two SGT subsystems can maintain ≥ 0.25 inch of vacuum water gauge in the secondary containment at a flow rate $\leq 12,000$ cfm.	24 18 months on a STAGGERED TEST BASIS

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.2.1	Verify the isolation time of each power operated, automatic SCIV is within limits.	92 days
SR 3.6.4.2.2	Verify each automatic SCIV actuates to the isolation position on an actual or simulated actuation signal.	24 18 months X

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each SGT subsystem for ≥ 10 continuous hours with heaters operating.	31 days
SR 3.6.4.3.2	Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3	Verify each SGT subsystem actuates on an actual or simulated initiation signal.	~~18~~ 24 months
SR 3.6.4.3.4	Verify the SGT decay heat discharge dampers are in the correct position.	12 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	Verify the average water temperature of UHS is ≤ 95°F.	24 hours
SR 3.7.2.2	-------------------NOTE------------------- Isolation of flow to individual components does not render EECW System inoperable. -- Verify each EECW system manual and power operated valve in the flow paths servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.2.3	Verify each required EECW pump actuates on an actual or simulated initiation signal.	24 18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Operate each CREV subsystem for ≥ 10 continuous hours with the heaters operating.	31 days
SR 3.7.3.2	Perform required CREV filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.3.3	Verify each CREV subsystem actuates on an actual or simulated initiation signal.	24 18 months
SR 3.7.3.4	Verify each CREV subsystem can maintain a positive pressure of ≥ 0.125 inches water gauge relative to the outdoors during the pressurization mode of operation at a flow rate of ≥ 2700 cfm and ≤ 3300 cfm.	24 18 months on a STAGGERED TEST BASIS

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Verify each control room AC subsystem has the capability to remove the assumed heat load.	24 18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.5.1	Verify one complete cycle of each main turbine bypass valve.	31 days
SR 3.7.5.2	Perform a system functional test.	24 18 months X
SR 3.7.5.3	Verify the TURBINE BYPASS SYSTEM RESPONSE TIME is within limits.	24 18 months X

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.5	------------------NOTES------------------ If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9. -- Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ 66.75 Hz; and b. Following load rejection, the steady state voltage recovers to ≥ 3940 V and ≤ 4400 V. c. Following load rejection, the steady state frequency recovers to ≥ 58.8 Hz and ≤ 61.2 Hz.	24 18 months
SR 3.8.1.6	------------------NOTE------------------ All DG starts may be preceded by an engine prelube period followed by a warmup period. -- Verify on an actual or simulated accident signal each DG auto-starts from standby condition.	24 18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.7	-------------------NOTE------------------- Momentary transients outside the load and power factor ranges do not invalidate this test. -- Verify each DG operating at a power factor ≤ 0.9 operates for ≥ 24 hours: a. For ≥ 2 hours loaded ≥ 2680 kW and ≤ 2805 kW; and b. For the remaining hours of the test loaded ≥ 2295 kW and ≤ 2550 kW.	24 18 months X
SR 3.8.1.8	Verify interval between each timed load block is within the allowable values for each individual timer.	24 18 months X

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.9	------------------NOTE------------------ All DG starts may be preceded by an engine prelube period. -- Verify, on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ECCS initiation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected emergency loads through individual timers, 3. achieves steady state voltage ≥ 3940 V and ≤ 4400 V, 4. achieves steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes.	24 18 months X
SR 3.8.1.10	For required Unit 1 and 2 DGs, the SRs of Unit 1 and 2 Technical Specifications are applicable.	In accordance with applicable SRs.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is ≥ 248 V for each Unit and Shutdown Board battery and ≥ 124 V for each DG battery on float charge.	7 days
SR 3.8.4.2	-------------------NOTE------------------- Performance of SR 3.8.4.5 satisfies this SR. -- Verify each required battery charger charges its respective battery after the battery's 18 24 month service test.	24 18 months
SR 3.8.4.3	-------------------NOTES------------------- The modified performance discharge test in SR 3.8.4.4 may be performed in lieu of the service test in SR 3.8.4.3 once per 60 months. -- Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	24 18 months

(continued)

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

of the HEPA filters shows a penetration and system bypass ≤ 1.0% when tested in accordance with ANSI N510-1975 at the system flowrate specified below, ± 10%.

ESF Ventilation System	Flowrate (cfm)
SGT System	9000
CREV System	3000

24

This testing shall be performed 1) every 18 months, 2) after partial or complete replacement of HEPA filters, 3) after any structural maintenance on the system housing, or 4) following significant painting, fire, or chemical release in any ventilation zone communicating with the system.

b. Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass ≤ 1.0% when tested in accordance with ANSI N510-1975 at the system flowrate specified below, ± 10%.

ESF Ventilation System	Flowrate (cfm)
SGT System	9000
CREV System	3000

24

This testing shall be performed 1) every 18 months, 2) after partial or complete replacement of the charcoal adsorber bank, 3) after any structural maintenance on the system housing, or 4) following significant painting, fire, or chemical release in any ventilation zone communicating with the system.

c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, shows a methyl iodide efficiency ≥ 90% when tested in accordance with ASTM D3803-1989.

24

This testing shall be performed 1) every 18 months, 2) after every 720 hours of system operation, or 3) following significant painting, fire, or chemical release in any ventilation zone communicating with the system.

(continued)

5.5 Programs and Manuals

24

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

d. Once every 18 months demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers is less than the value specified below at the system flowrate specified below, ± 10%:

ESF Ventilation System	Delta P (inches water)	Flowrate (cfm)
SGT System	7	9000
CREV System	6	3000

24

e. Once every 18 months demonstrate that the heaters for the SGT System dissipate 40 kW ± 10% when tested in accordance with ANSI N510-1975.

5.5.8 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained downstream of the offgas recombiners, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks.

The program shall include:

a. The limits for concentrations of hydrogen downstream of the offgas recombiners and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion); and

b. A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the liquid radwaste treatment system is less than the amount that would result in concentrations less than the limits of 10 CFR 20, Appendix B, Table 2, Column 2, at the nearest potable water supply and the nearest surface water supply in

(continued)

Insert-A (replaces Bases statements as indicated on the following markups)

Operating experience with these components supports performance of the Surveillance at the 24 month Frequency.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.8.1.1 and SR 3.3.8.1.2 (continued)

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency is based upon the calibration interval assumed in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.8.1.3

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required actuation logic for a specific channel. The system functional testing performed in LCO 3.8.1 and LCO 3.8.2 overlaps this Surveillance to provide complete testing of the assumed safety functions.

24

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

Insert-A

Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

REFERENCES

1. FSAR, Figure 8.4-4.

2. FSAR, Section 6.5.

3. FSAR, Section 8.5.4.

4. FSAR, Chapter 14.

5. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1.3 and SR 3.6.4.1.4 (continued)

if the secondary containment boundary is not intact. SR 3.6.4.1.4 demonstrates that two SGT subsystems can maintain ≥ 0.25 inches of vacuum water gauge at a stable flow rate ≤ 12,000 cfm. Both of these SRs are performed under neutral (< 5 mph) wind conditions. Therefore, these two tests are used to ensure secondary containment boundary integrity. Since these SRs are secondary containment tests, they need not be performed with each combination of SGT subsystems. The SGT subsystems are tested on a STAGGERED TEST BASIS, however, to ensure that in addition to the requirements of LCO 3.6.4.3, any two SGT subsystems will perform this test. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Insert-A

REFERENCES

1. FSAR, Section 5.3.
2. FSAR, Section 14.6.3.
3. FSAR, Section 14.6.4.
4. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.2.1 (continued)

assumed in the safety analyses. The Frequency of this SR is 92 days.

SR 3.6.4.2.2

Verifying that each automatic SCIV closes on a secondary containment isolation signal is required to prevent leakage of radioactive material from secondary containment following a DBA or other accidents. This SR ensures that each automatic SCIV will actuate to the isolation position on a secondary containment isolation signal. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," overlaps this SR to provide complete testing of the safety function. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

24

Insert-A

REFERENCES

1. FSAR, Section 14.6.3.
2. FSAR, Section 14.6.4.
3. Technical Requirements Manual.
4. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.2 (continued)

flow rate, and the physical properties of the activated charcoal (general use and following specific operations). This SR will also include a chemical smoke test to check the sealing of gaskets for filter housing doors.

Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.6.4.3.3

Insert-A

This SR verifies that each SGT subsystem starts on receipt of an actual or simulated initiation signal. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," overlaps this SR to provide complete testing of the safety function. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

SR 3.6.4.3.4

This SR verifies that the SGT decay heat discharge dampers are in the correct position. This ensures that the decay heat removal mode of SGT System operation is available. Operating experience has shown that these components usually pass the Surveillance when performed at the 12 month Frequency. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 41.
2. FSAR, Section 5.3.3.7.
3. FSAR, Section 14.6.
4. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.2.3 (continued)

Insert-A

Operating experience has shown that these components will usually pass the SR when performed at the 18 month Frequency. Therefore, this Frequency is concluded to be acceptable from a reliability standpoint.

REFERENCES

1. FSAR, Chapter 5.
2. FSAR, Chapter 14.
3. FSAR, Section 10.10.
4. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.3.4 (continued)

with respect to the outdoors to prevent unfiltered inleakage. The CREV System is designed to maintain this positive pressure at a flow rate of ≥ 2700 cfm and ≤ 3300 cfm to the control room in the pressurization mode. The Frequency of 18 months on a STAGGERED TEST BASIS is consistent with industry practice and other filtration systems SRs.

24

REFERENCES

1. FSAR, Section 10.12.
2. FSAR, Chapter 10.
3. FSAR, Chapter 14.
4. FSAR, Section 14.6.
5. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

ACTIONS

D.1, D.2.1, D.2.2, and D.2.3 (continued)

An alternative to Required Action D.1 is to immediately suspend activities that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk.

If applicable, CORE ALTERATIONS and movement of irradiated fuel assemblies in the secondary containment must be suspended immediately. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, actions must be initiated immediately to suspend OPDRVs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until the OPDRVs are suspended.

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1

This SR verifies that the heat removal capability of the system is sufficient to remove the control room heat load assumed in the safety analyses. The SR consists of a combination of testing and calculation. The 18 month Frequency is appropriate since significant degradation of the Control Room AC System is not expected over this time period.

24

REFERENCES

1. FSAR, Section 10.12.
2. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.5 (continued)

24

18 month Frequency is consistent with the recommendations of Regulatory Guide 1.9 (Ref. 8).

This SR is modified by a Note. In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, the Note requires that, if synchronized to offsite power, testing must be performed using a power factor ≤ 0.9. This power factor is chosen to be representative of the actual design basis inductive loading that the DG would experience.

SR 3.8.1.6

This Surveillance demonstrates that the DG automatically starts from the design basis actuation signal (LOCA signal). This test will also verify the start of the Unit 3 DGs aligned to the SGT and CREV Systems on an accident signal from Unit 1. In order to minimize the number of DGs involved in testing, demonstration of automatic starts of the Unit 3 DGs on an accident signal from Unit 1 may be performed in conjunction with testing to demonstrate automatic starts of the Unit 3 DGs on an accident signal from Unit 3. ~~Operating experience has shown that these~~ components usually pass the SR when performed at the 18 month Frequency. ~~Therefore, the Frequency is acceptable from a reliability~~ standpoint.

Insert-A

To minimize wear and tear on the DGs, this SR has been modified by a Note which permits DG starts to be preceded by an engine prelube period followed by a warmup period.

SR 3.8.1.7

24

Demonstration once per 18 months that the DGs can start and run continuously at full load capability for an interval of not less than 24 hours — 22 hours of which is at a load equivalent to the continuous rating of the DG, and 2 hours of which is at a load equivalent to 105 percent to 110 percent of the continuous duty rating of the DG. The DG starts for this Surveillance can be performed either from standby or hot conditions. The provisions for prelube and

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.7 (continued)

warmup, discussed in SR 3.8.1.1, and for gradual loading, discussed in SR 3.8.1.2, are applicable to this SR.

In order to ensure that the DG is tested under load conditions that are as close to design conditions as possible, testing must be performed using a power factor ≤ 0.9. This power factor is chosen to be representative of the actual design basis inductive loading that the DG could experience. A load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

24

The 18 month Frequency is consistent with the recommendations of Regulatory Guide 1.9 (Ref. 8).

This Surveillance has been modified by a Note that states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary power factor transients above the limit do not invalidate the test.

SR 3.8.1.8

Under accident conditions (and loss of offsite power) loads are sequentially connected to the shutdown boards by automatic individual pump timers. The individual pump timers control the permissive and starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. This SR is demonstrated by performance of SR 3.3.5.1.5 for the Core Spray and LPCI pump timers, SR 3.7.2.3 for the EECW pump timers, and SR 3.8.1.9.b for the 480 V load shed logic timers. The allowable values for these timers ensure that sufficient time exists for the DG to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding ESF equipment time delays are not violated. Reference 2 provides a summary of the automatic loading of ESF shutdown boards.

24

The Frequency of 18 months is consistent with the recommendations of Regulatory Guide 1.9 (Ref. 8).

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.9

In the event of a DBA coincident with a loss of offsite power, the DGs are required to supply the necessary power to ESF systems so that the fuel, RCS, and containment design limits are not exceeded.

This Surveillance demonstrates the as designed operation of the standby power sources during a loss of offsite power actuation test signal in conjunction with an ECCS initiation signal. This test verifies all actions encountered from the loss of offsite power in conjunction with an ECCS initiation signal, including shedding of the nonessential loads and energization of the 4.16 kV shutdown boards and respective loads from the DG. It further demonstrates the capability of the DG to automatically achieve the required voltage and frequency within the specified time.

The requirement to verify the connection and power supply of permanent and auto-connected loads is intended to satisfactorily show the relationship of these loads to the DG loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential for undesired operation. For instance, Emergency Core Cooling Systems (ECCS) injection valves are not desired to be stroked open, some systems are not capable of being operated at full flow, and RHR systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of the connection and loading of these loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

24

The Frequency of 18 months takes into consideration plant conditions required to perform the Surveillance and is intended to be consistent with an expected fuel cycle length of 18 months.

24

This SR is modified by a Note. The reason for the Note is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.1 (continued)

in a fully charged state, while supplying adequate power to the connected DC loads. The voltage requirements are based on the nominal design voltage of the battery and are consistent with the initial voltages assumed in the battery sizing calculations. The 7 day Frequency is consistent with manufacturer recommendations and IEEE-450 (Ref. 7).

SR 3.8.4.2 and SR 3.8.4.5

Battery charger capability requirements are based on the design capacity of the chargers (Ref. 4). According to Regulatory Guide 1.32 (Ref. 8), the battery charger supply is required to be based on the largest combined demands of the various steady state loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state, irrespective of the status of the unit during these demand occurrences. The minimum required amperes and verification of the charger's ability to recharge the battery ensures that these requirements can be satisfied.

SR 3.8.4.2 verifies that the chargers are capable of charging the batteries after their designed duty cycle testing and ensures that the chargers will perform their design function. This SR is modified by a Note that allows the performance of SR 3.8.4.5 in lieu of this surveillance requirement. SR 3.8.4.5 verifies that the chargers are capable of charging the batteries after each discharge test and ensures that the chargers are capable of performing at 24 maximum output. SR 3.8.4.2 is performed at the same frequency as the 18 month service test (SR 3.8.4.3), while SR 3.8.4.5 is performed following the 60 month battery discharge test (SR 3.8.4.4).

SR 3.8.4.5 is modified by a Note. The Note is added to this SR to acknowledge that credit may be taken for unplanned events that satisfy the Surveillance.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.4.3

A battery service test is a special test of the battery's capability, as found, to satisfy the design requirements (battery duty cycle) of the DC electrical power system. The discharge rate and test length corresponds to the design duty cycle requirements as specified in Reference 4.

5/26/98

The Frequency of 18 months is consistent with the recommendations of Regulatory Guide 1.32 (Ref. 8) and Regulatory Guide 1.129 (Ref. 9), which state, in part, that the battery service test should be performed with intervals between tests not to exceed 18 months.

24

Plant conditions required to perform the Surveillance, plus other supporting Surveillance Requirements.

This SR is modified by a Note that allows the performance of a modified performance discharge test in lieu of a service test once per 60 months. The modified performance discharge test is a simulated duty cycle consisting of just two rates; the one minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance test, both of which envelope the duty cycle of the service test. Since the ampere-hours removed by a rated one minute discharge represents a very small portion of the battery capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test. The battery terminal voltage for the modified performance discharge test should remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test.

A modified discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test should be identical to those specified for a service test.

(continued)

BASES

REFERENCES (continued)

3. IEEE Standard 308.

4. FSAR, Sections 8.5 and 8.6.

5. FSAR, Chapters 6 and 14.

6. Regulatory Guide 1.93.

7. IEEE Standard 450-1995.

8. Regulatory Guide 1.32, February 1977.

[Not Used]

9. Regulatory Guide 1.129, December 1974.

10. IEEE Standard 485, 1983.

11. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.1.7.3 and SR 3.1.7.5 (continued)

SR 3.1.7.3 must be performed within 8 hours of discovery that the concentration is > 9.2 weight percent and every 12 hours thereafter until the concentration is verified to be ≤ 9.2 weight percent. This Frequency is appropriate under these conditions taking into consideration the SLC System design capability still exists for vessel injection under these conditions and the low probability of the temperature and concentration limits of Figure 3.1.7-1 not being met.

SR 3.1.7.4

This Surveillance requires the amount of Boron-10 in the SLC solution tank to be determined every 31 days. The enriched sodium pentaborate solution is made by combining stoichiometric quantities of borax and boric acid in demineralized water. Since the chemicals used have known Boron-10 quantities, the Boron-10 quantity in the sodium pentaborate solution formed can be calculated. This parameter is used as input to determine the volume requirements for SR 3.1.7.1. The 31 day Frequency of this Surveillance is appropriate because of the relatively slow variation of boron concentration between surveillances.

SR 3.1.7.6

Demonstrating that each SLC System pump develops a flow rate ≥ 39 gpm at a discharge pressure ≥ 1275 psig ensures that pump performance has not degraded during the fuel cycle. This minimum pump flow rate requirement ensures that, when combined with the sodium pentaborate solution concentration and enrichment requirements, the rate of negative reactivity insertion from the SLC System will adequately compensate for the positive reactivity effects encountered during power reduction, cooldown of the moderator, and xenon decay. This test confirms one point on the pump design curve and is indicative of overall performance. The 18 month Frequency is acceptable since inservice testing of the pumps, performed every 92 days, will detect any adverse trends in pump performance.

24

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.1.7.7 and SR 3.1.7.8

These Surveillances ensure that there is a functioning flow path from the boron solution storage tank to the RPV, including the firing of an explosive valve. The replacement charge for the explosive valve shall be from the same manufactured batch as the one fired or from another batch that has been certified by having one of that batch successfully fired. Additionally, replacement charges shall be selected such that the age of charge in service shall not exceed five years from the manufacturer's assembly date. The pump and explosive valve tested should be alternated such that both complete flow paths are tested every 24
48 36 months at alternating 18 month intervals. The XX
Surveillance may be performed in separate steps to prevent injecting boron into the RPV. An acceptable method for verifying flow from the pump to the RPV is to pump 24
demineralized water from a test tank through one SLC subsystem and into the RPV. The 18 month Frequency is based X
on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance
Insert-A
were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency; therefore, the Frequency was concluded to be acceptable from a reliability standpoint. X

Demonstrating that all piping between the boron solution storage tank and the suction inlet to the injection pumps is unblocked ensures that there is a functioning flow path for injecting the sodium pentaborate solution. An acceptable method for verifying that the suction piping is unblocked is to pump from the storage tank to the storage tank. The
24 18 month Frequency is acceptable since there is a low probability that the subject piping will be blocked due to X
precipitation of the boron from solution in the piping or by other means.

SR 3.1.7.9

The enriched sodium pentaborate solution is made by combining stoichiometric quantities of borax and boric acid in demineralized water. Isotopic tests on these chemicals

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.1.7.9 (continued) 24

to verify the actual B-10 enrichment must be performed at least every 18 months and after addition of boron to the SLC tank in order to ensure that the proper B-10 atom percentage is being used and SR 3.1.7.5 will be met. The sodium pentaborate enrichment must be calculated within 24 hours and verified by analysis within 30 days.

SR 3.1.7.10

SR 3.1.7.10 verifies that each valve in the system is in its correct position, but does not apply to the squib (i.e., explosive) valves. Verifying the correct alignment for manual, power operated, and automatic valves in the SLC System Flowpath provides assurance that the proper flow paths will exist for system operation. A valve is also allowed to be in the nonaccident position provided it can be aligned to the accident position from the control room, or locally by a dedicated operator at the valve control. This is acceptable since the SLC System is a manually initiated system. This surveillance also does not apply to valves that are locked, sealed, or otherwise secured in position since they are verified to be in the correct position prior to locking, sealing or securing. This verification of valve alignment does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves. The 31 day Frequency is based on engineering judgment and is consistent with the procedural controls governing valve operation that ensures correct valve positions.

REFERENCES

1. 10 CFR 50.62.

2. FSAR, Section 3.8.4.

3. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.1.8.3

SR 3.1.8.3 is an integrated test of the SDV vent and drain valves to verify total system performance. After receipt of a simulated or actual scram signal, the closure of the SDV vent and drain valves is verified. The closure time of 60 seconds after receipt of a scram signal is acceptable based on the bounding analysis for release of reactor coolant outside containment (Ref. 2). Similarly, after receipt of a simulated or actual scram reset signal, the opening of the SDV vent and drain valves is verified. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.1.1 and the scram time testing of control rods in LCO 3.1.3 overlap this Surveillance to provide complete testing of the assumed safety function. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency; therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

24

Insert-A

X

X

REFERENCES

1. FSAR, Section 3.4.5.3.1.
2. FSAR, Section 14.6.5.
3. 10 CFR 100.
4. FSAR, Section 6.5.
5. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.8, SR 3.3.1.1.12 and SR 3.3.1.1.16 (continued)

interface connections into the RPS trip systems from the voter channels. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology. The 184 day Frequency of SR 3.3.1.1.16 for the APRM Functions is based on the reliability analysis of Reference 12. (NOTE: The actual voting logic of the 2-out-of-4 Voter Function is tested as part of SR 3.3.1.1.14.) A Note for SR 3.3.1.1.16 is provided that requires the APRM Function 2.a SR to be performed within 12 hours of entering MODE 2 from MODE 1. Testing of the MODE 2 APRM Function cannot be performed in MODE 1 without utilizing jumpers or lifted leads. This Note allows entry into MODE 2 from MODE 1 if the associated frequency is not met per SR 3.0.2. Twelve hours is based on operating experience and in consideration of providing a reasonable time in which to complete the SR.

The 184 day Frequency of SR 3.3.1.1.16 for the scram pilot air header low pressure trip function is based on the functional reliability previously demonstrated by this function, the need for minimizing the radiation exposure associated with the functional testing of this function, and the increased risk to plant availability while the plant is in a half-scram condition during the performance of the functional testing versus the limited increase in reliability that would be obtained by the more frequent functional testing.

24

The 18 month Frequency of SR 3.3.1.1.12 is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

Insert-A

SR 3.3.1.1.9, SR 3.3.1.1.10 and SR 3.3.1.1.13

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies that the channel responds to the measured parameter within the necessary

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.1.14

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required trip logic for a specific channel. The functional testing of control rods (LCO 3.1.3), and SDV vent and drain valves (LCO 3.1.8), overlaps this Surveillance to provide complete testing of the assumed safety function.

24

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

Insert-A

The LOGIC SYSTEM FUNCTIONAL TEST for APRM Function 2.e simulates APRM trip conditions at the 2-out-of-4 voter channel inputs to check all combinations of two tripped inputs to the 2-out-of-4 logic in the voter channels and APRM related redundant RPS relays.

SR 3.3.1.1.15

This SR ensures that scrams initiated from the Turbine Stop Valve—Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure—Low Functions will not be inadvertently bypassed when THERMAL POWER is ≥ 30% RTP. This involves calibration of the bypass channels. Adequate margins for the instrument setpoint methodologies are incorporated into the actual setpoint.

If any bypass channel's setpoint is nonconservative (i.e., the Functions are bypassed at ≥ 30% RTP, either due to open main turbine bypass valve(s) or other reasons), then the affected Turbine Stop Valve—Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure—Low Functions are considered inoperable. Alternatively, the bypass channel can be placed in the conservative condition (nonbypass). If placed in the nonbypass condition (Turbine Stop Valve—Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure—Low Functions are enabled), this SR is met and the channel is considered OPERABLE.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.2.1.5

The RWM is automatically bypassed when power is above a specified value. The power level is determined from feedwater flow and steam flow signals. The automatic bypass setpoint must be verified periodically to be > 10% RTP. If the RWM low power setpoint is nonconservative, then the RWM is considered inoperable. Alternately, the low power setpoint channel can be placed in the conservative condition (nonbypass). If placed in the nonbypassed condition, the SR is met and the RWM is not considered inoperable. The Frequency is based on the trip setpoint methodology utilized for the low power setpoint channel.

SR 3.3.2.1.6

A CHANNEL FUNCTIONAL TEST is performed for the Reactor Mode Switch - Shutdown Position Function to ensure that the entire channel will perform the intended function. The CHANNEL FUNCTIONAL TEST for the Reactor Mode Switch - Shutdown Position Function is performed by attempting to withdraw any control rod with the reactor mode switch in the shutdown position and verifying a control rod block occurs.

As noted in the SR, the Surveillance is not required to be performed until 1 hour after the reactor mode switch is in the shutdown position, since testing of this interlock with the reactor mode switch in any other position cannot be performed without using jumpers, lifted leads, or movable links. This allows entry into MODES 3 and 4 if the ~~18~~ 24 month Frequency is not met per SR 3.0.2. The 1 hour allowance is based on operating experience and in consideration of providing a reasonable time in which to complete the SRs. X

The ~~18~~ 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. X

Insert-A

~~Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.~~ X

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.2.2.3

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequency is based upon the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.2.2.4

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required trip logic for a specific channel. The system functional test of the feedwater and main turbine valves is included as part of this Surveillance and overlaps the LOGIC SYSTEM FUNCTIONAL TEST to provide complete testing of the assumed safety function. Therefore if a valve is incapable of operating, the associated instrumentation would also be inoperable. The ~~18~~ 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if ~~the Surveillance were performed with the reactor at power.~~ Insert-A ~~Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.~~

REFERENCES

1. FSAR, Section 14.5.7.

2. GENE-770-06-1, "Bases for Changes to Surveillance Test Intervals and Allowed Out-Of-Service Times for Selected Instrumentation Technical Specifications," February 1991.

3. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

ACTIONS (continued)

A.1

Condition A addresses the situation where one or more required Functions of the Backup Control System is inoperable. This includes any Function listed in Table B 3.3.3.2-1, as well as the control and transfer switches.

The Required Action is to restore the Function to OPERABLE status within 30 days. The Completion Time is based on operating experience and the low probability of an event that would require evacuation of the control room.

B.1

If the Required Action and associated Completion Time of Condition A are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours. The allowed Completion Time is reasonable, based on operating experience, to reach the required MODE from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.3.3.2.1

SR 3.3.3.2.1 verifies each required Backup Control System transfer switch and control circuit performs the intended function. This verification is performed from the backup control panel and locally, as appropriate. Operation of the equipment from the backup control panel is not necessary. The Surveillance can be satisfied by performance of a continuity check. This will ensure that if the control room becomes inaccessible, the plant can be placed and maintained in MODE 3 from the backup control panel and the local control stations. Operating experience demonstrates that Backup Control System control channels usually pass the Surveillance when performed at the 18 month Frequency.

Insert-A

X

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.4.1.3 (continued)

The Frequency is based upon the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.4.1.4

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required trip logic for a specific channel. The system functional test of the pump breakers is included as a part of this test, overlapping the LOGIC SYSTEM FUNCTIONAL TEST, to provide complete testing of the associated safety function. Therefore, if a breaker is incapable of operating, the associated instrument channel(s) would also be inoperable.

24

Insert-A

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

REFERENCES

1. FSAR, Figure 7.9-2 (EOC-RPT logic diagram).
2. FSAR, Section 7.9.4.5.
3. FSAR, Sections 14.5.1.1 and 14.5.1.3.
4. FSAR, Section 4.3.5.
5. GENE-770-06-1, "Bases For Changes To Surveillance Test Intervals And Allowed Out-Of-Service Times For Selected Instrumentation Technical Specifications," February 1991.
6. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.4.2.4

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required trip logic for a specific channel. The system functional test of the pump breakers is included as part of this Surveillance and overlaps the LOGIC SYSTEM FUNCTIONAL TEST to provide complete testing of the assumed safety function. Therefore, if a breaker is incapable of operating, the associated instrument channel(s) would be inoperable.

24

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

Insert-A

REFERENCES

1. FSAR Section 7.19.
2. GENE-770-06-1, "Bases for Changes To Surveillance Test Intervals and Allowed Out-of-Service Times For Selected Instrumentation Technical Specifications," February 1991.
3. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.5.1.6 (continued)

Surveillance to complete testing of the assumed safety function.

24

Insert-A

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

REFERENCES

1. FSAR, Section 8.5.
2. FSAR, Section 6.5.
3. FSAR, Chapter 14.
4. NEDC-30936-P-A, "BWR Owners' Group Technical Specification Improvement Analyses for ECCS Actuation Instrumentation, Part 2," December 1988.
5. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.
6. NUREG-0737, "Clarification of TMI Action Plan Requirements," October 31, 1980.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.5.2.3

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequency of SR 3.3.5.2.3 is based upon the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.5.2.4

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required initiation logic for a specific channel. The system functional testing performed in LCO 3.5.3 overlaps this Surveillance to provide complete testing of the safety function.

24

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

Insert-A

REFERENCES

1. GENE-770-06-2, "Addendum to Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," February 1991.

2. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.6.1.6

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required isolation logic for a specific channel. The system functional testing performed on PCIVs in LCO 3.6.1.3 overlaps this Surveillance to provide complete testing of the assumed safety function. The LOGIC SYSTEM FUNCTIONAL TEST shall include a calibration of time delay relays and timers necessary for proper functioning of the logic. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

24

Insert-A

Operating experience has shown these components usually pass the Surveillance when performed at the Frequency provided.

REFERENCES

1. FSAR, Section 6.5.
2. FSAR, Chapter 14.
3. NEDO-31466, "Technical Specification Screening Criteria Application and Risk Assessment," November 1987.
4. FSAR, Section 4.9.3.
5. NEDC-31677P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation," July 1990.
6. NEDC-30851P-A Supplement 2, "Technical Specifications Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation," March 1989.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.6.2.2 (continued)

This Surveillance for Functions 3 and 4 shall consist of verifying the High Voltage Power Supply (HVPS) voltage at the sensor and convertors (detectors) is within its design limits. A CHANNEL FUNCTIONAL TEST as defined in Section 1.1, "Definitions" shall be performed once per 18 months as part of the CHANNEL CALIBRATION for Functions 3 and 4.

SR 3.3.6.2.3

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequency of SR 3.3.6.2.3 is based on the magnitude of equipment drift in the setpoint analysis.

SR 3.3.6.2.4

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required isolation logic for a specific channel. The system functional testing performed on SCIVs and the SGT System in LCO 3.6.4.2 and LCO 3.6.4.3, respectively, overlaps this Surveillance to provide complete testing of the assumed safety function.

24

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

Operating experience with these components supports performance of these Surveillances at their designated Frequencies.

Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.7.1.2 (continued)

The Frequency of 92 days is based on the reliability analyses of References 3 and 4.

This Surveillance for Functions 3 and 4 shall consist of verifying the High Voltage Power Supply (HVPS) voltage at the Sensor and Convertors (detectors) is within its design limits. A CHANNEL FUNCTIONAL TEST as defined in Section 1.1, "Definitions" shall be performed once per 18 months as part of the CHANNEL CALIBRATION for Functions 3 and 4.

SR 3.3.7.1.3 and SR 3.3.7.1.5

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequencies are based upon the magnitude of equipment drift in the setpoint analysis.

SR 3.3.7.1.4 and SR 3.3.7.1.6

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required initiation logic for a specific channel. The system functional testing performed in LCO 3.7.3, "Control Room Emergency Ventilation (CREV) System," overlaps this Surveillance to provide complete testing of the assumed ~~safety~~ function.

The 184 day Frequency for Function 5 is based on equipment capability. The 18 24 month Frequency for Functions 1, 2, 3, and 4 is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at their designated Frequencies.

Operating experience with these components supports performance of these Surveillances at their designated Frequencies.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.8.1.1 and SR 3.3.8.1.2 (continued)

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency is based upon the calibration interval assumed in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.8.1.3

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required actuation logic for a specific channel. The system functional testing performed in LCO 3.8.1 and LCO 3.8.2 overlaps this Surveillance to provide complete testing of the assumed safety functions.

24

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

Insert-A

Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

REFERENCES

1. FSAR, Figure 8.4-4.
2. FSAR, Section 6.5.
3. FSAR, Section 8.5.4.
4. FSAR, Chapter 14.
5. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.8.2.3 (continued)

24

Insert A

The ~~18~~ month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. ~~Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.~~

REFERENCES

1. FSAR, Section 7.2.3.2.
2. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.4.3.2

A manual actuation of each required S/RV is performed to verify that, mechanically, the valve is functioning properly and no blockage exists in the valve discharge line. This can be demonstrated by the response of the turbine control valves or bypass valves, by a change in the measured steam flow, or by any other method suitable to verify steam flow. Adequate reactor steam dome pressure must be available to perform this test to avoid damaging the valve. Also, adequate steam flow must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the S/RVs divert steam flow upon opening. Sufficient time is therefore allowed after the required pressure is achieved to perform this test. Adequate pressure at which this test is to be performed is 920 psig (the pressure recommended by the valve manufacturer). Adequate steam flow is represented by at least 3 turbine bypass valves open. Plant startup is allowed prior to performing this test because valve OPERABILITY and the setpoints for overpressure protection are verified, per ASME Code requirements, prior to valve installation. Therefore, this SR is modified by a Note that states the Surveillance is not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. The 12 hours allowed for manual actuation after the required pressure is reached is sufficient to achieve stable conditions for testing and provides a reasonable time to complete the SR. If a valve fails to actuate due only to the failure of the solenoid but is capable of opening on overpressure, the safety function of the S/RV is considered OPERABLE.

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Insert-A

The 18 month Frequency was developed based on the S/RV tests required by the ASME Boiler and Pressure Vessel Code, Section XI (Ref. 3). Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.1.6, SR 3.5.1.7, and SR 3.5.1.8 (continued)

operating ranges of the system. Additionally, adequate steam flow must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the HPCI System diverts steam flow. Reactor steam pressure must be ≥ 920 psig to perform SR 3.5.1.7 and ≥ 150 psig to perform SR 3.5.1.8. Adequate steam flow is represented by reactor power ≥ 2.5% for SR 3.5.1.7 and at least two turbine bypass valves open for SR 3.5.1.8. Therefore, sufficient time is allowed after adequate pressure and flow are achieved to perform these tests. Reactor startup is allowed prior to performing the low pressure Surveillance test because the reactor pressure is low and the time allowed to satisfactorily perform the Surveillance test is short. Alternately, the low pressure Surveillance test may be performed prior to startup using an auxiliary steam supply. The reactor pressure is allowed to be increased to normal operating pressure since it is assumed that the low pressure test has been satisfactorily completed and there is no indication or reason to believe that HPCI is inoperable.

Therefore, SR 3.5.1.7 and SR 3.5.1.8 are modified by Notes that state the Surveillances are not required to be performed until 12 hours after the reactor steam pressure and flow are adequate to perform the test.

24

The Frequency for SR 3.5.1.6 and SR 3.5.1.7 is in accordance with the Inservice Testing Program requirements. The 18 month Frequency for SR 3.5.1.8 is based on the need to perform the Surveillance under the conditions that apply just prior to or during a startup from a plant outage. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Insert-A

X

X

SR 3.5.1.9

The ECCS subsystems are required to actuate automatically to perform their design functions. This Surveillance verifies that, with a required system initiation signal (actual or

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.1.9 (continued)

simulated), the automatic initiation logic of HPCI, CS, and LPCI will cause the systems or subsystems to operate as designed, including actuation of the system throughout its emergency operating sequence, automatic pump startup and actuation of all automatic valves to their required positions. This SR also ensures that the HPCI System willautomatically restart on an RPV low-low water level (Level 2) signal received subsequent to an RPV high water level (Level 8) trip and that the suction is automatically transferred from the CST to the suppression pool. The LOGIC SYSTEM FUNCTIONAL TEST performed in LCO 3.3.5.1 overlaps this Surveillance to provide complete testing of the assumed safety function.

24

The ~~18~~ month Frequency is based on the need to perform the Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

Insert-A

~~Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency~~, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

This SR is modified by a Note that excludes vessel injection/spray during the Surveillance. Since all active components are testable and full flow can be demonstrated by recirculation through the test line, coolant injection into the RPV is not required during the Surveillance.

SR 3.5.1.10

The ADS designated S/RVs are required to actuate automatically upon receipt of specific initiation signals. A system functional test is performed to demonstrate that the mechanical portions of the ADS function (i.e., solenoids) operate as designed when initiated either by an actual or simulated initiation signal, causing proper actuation of all the required components. SR 3.5.1.11 and the LOGIC SYSTEM FUNCTIONAL TEST performed in LCO 3.3.5.1 overlap this Surveillance to provide complete testing of the assumed safety function.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.1.10 (continued)

24

The 18 month Frequency is based on the need to perform the Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Insert-A

This SR is modified by a Note that excludes valve actuation. This prevents an RPV pressure blowdown.

SR 3.5.1.11

A manual actuation of each ADS valve is performed to verify that the valve and solenoid are functioning properly and that no blockage exists in the S/RV discharge lines. This is demonstrated by the response of the turbine control or bypass valve or by a change in the measured flow or by any other method suitable to verify steam flow. Adequate reactor steam dome pressure must be available to perform this test to avoid damaging the valve. Also, adequate steam flow must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the ADS valves divert steam flow upon opening. Sufficient time is therefore allowed after the required pressure and flow are achieved to perform this SR. Adequate pressure at which this SR is to be performed is 920 psig (the pressure recommended by the valve manufacturer). Adequate steam flow is represented by at least 3 turbine bypass valves open. Reactor startup is allowed prior to performing this SR because valve OPERABILITY and the setpoints for overpressure protection are verified, per ASME requirements, prior to valve installation. Therefore, this SR is modified by a Note that states the Surveillance is not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. The 12 hours allowed for manual actuation after the required pressure is reached is sufficient to achieve stable conditions and provides adequate time to complete the Surveillance. SR 3.5.1.10 and the LOGIC SYSTEM FUNCTIONAL TEST performed in LCO 3.3.5.1

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.1.11 (continued)

overlap this Surveillance to provide complete testing of the assumed safety function.

24

The Frequency of 18 months is based on the need to perform the Surveillance under the conditions that apply just prior to or during a startup from a plant outage. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Insert-A

24

SR 3.5.1.12

Verification every 18 months of the automatic transfer capability between the normal and alternate power supply (480 V shutdown boards) for the RMOV boards which supply power for each LPCI subsystem inboard injection valve and each recirculation pump discharge valve demonstrates that AC electrical power is available to operate these valves following loss of power to one of the 4 kV shutdown boards. The ability to provide power to the inboard injection valve and the recirculation pump discharge valve from two independent 4 kV shutdown boards ensures that single failure of an EDG will not result in the failure of both LPCI pumps in one subsystem. Therefore, the failure of the automatic transfer capability will result in the inoperability of the affected LPCI subsystem. The 18 month Frequency has been found to be acceptable based on engineering judgment and operating experience.

24

REFERENCES

1. FSAR, Section 6.4.3.
2. FSAR, Section 6.4.4.
3. FSAR, Section 6.4.1.
4. FSAR, Section 6.4.2.
5. FSAR, Section 14.6.3.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.3.3 and SR 3.5.3.4 (continued)

reactor steam pressure and flow are adequate to perform the test.

24

A 92 day Frequency for SR 3.5.3.3 is consistent with the Inservice Testing Program requirements. The 18 month Frequency for SR 3.5.3.4 is based on the need to perform the Surveillance under conditions that apply just prior to or during a startup from a plant outage. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Insert-A

SR 3.5.3.5

The RCIC System is required to actuate automatically in order to perform its design function satisfactorily. This Surveillance verifies that, with a required system initiation signal (actual or simulated), the automatic initiation logic of the RCIC System will cause the system to operate as designed, including actuation of the system throughout its emergency operating sequence; that is, automatic pump startup and actuation of all automatic valves to their required positions. This test also ensures the RCIC System will automatically restart on an RPV low-low water level (Level 2) signal received subsequent to an RPV high water level (Level 8) trip. The LOGIC SYSTEM FUNCTIONAL TEST performed in LCO 3.3.5.2 overlaps this Surveillance to provide complete testing of the assumed safety function.

24

The 18 month Frequency is based on the need to perform the Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Insert-A

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1.1 (continued)

this SR. The impact of the failure to meet this SR must be evaluated against the Type A, B, and C acceptance criteria of the Primary Containment Leakage Rate Testing Program. As left leakage prior to the first startup after performing a required leakage test is required to be < 0.6 L_a for combined Type B and C leakage, and < 0.75 L_a for overall Type A leakage. At all other times between required leakage rate tests, the acceptance criteria is based on an overall Type A leakage limit of ≤ 1.0 L_a. At ≤ 1.0 L_a the offsite dose consequences are bounded by the assumptions of the safety analysis. The Frequency is specified in the Primary Containment Leakage Rate Testing Program.

SR 3.6.1.1.2

Maintaining the pressure suppression function of primary containment requires limiting the leakage from the drywell to the suppression chamber. Thus, if an event were to occur that pressurized the drywell, the steam would be directed through the downcomers into the suppression pool. This SR measures drywell to suppression chamber differential pressure during a 10 minute period to ensure that the leakage paths that would bypass the suppression pool are within allowable limits.

Satisfactory performance of this SR can be achieved by establishing a known differential pressure between the drywell and the suppression chamber and verifying that the pressure in either the suppression chamber or the drywell does not change by more than 0.25 inch of water per minute over a 10 minute period. The leakage test is performed every 18 months. The 18 month Frequency was developed considering it is prudent that this Surveillance be performed during a unit outage and also in view of the fact that component failures that might have affected this test are identified by other primary containment SRs.

24

24

XX

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.3.7

Automatic PCIVs close on a primary containment isolation signal to prevent leakage of radioactive material from primary containment following a DBA. This SR ensures that each automatic PCIV will actuate to its isolation position on a primary containment isolation signal. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.6.1 overlaps this SR to provide complete testing of the safety function. The ~~18~~ 24 month Frequency was developed considering it is prudent that this Surveillance be performed only during a unit outage since isolation of penetrations would eliminate cooling water flow and disrupt the normal operation of many critical components. ~~Operating experience has shown that these components usually pass this Surveillance when performed at the 18 month Frequency.~~ Insert-A Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.6.1.3.8

This SR requires a demonstration that each reactor instrumentation line excess flow check valve (EFCV) is OPERABLE by verifying that the valve actuates to the isolation position on an actual or simulated instrument line break signal. This SR provides assurance that the instrumentation line EFCVs will perform so that the radiological consequences will not exceed the predicted radiological consequences during events evaluated in Reference 5. The ~~18~~ 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. ~~Operating experience has shown that these components usually pass this Surveillance when performed at the 18 month Frequency.~~ Insert-A Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.6.1.3.9

The TIP shear isolation valves are actuated by explosive charges. An in place functional test is not possible with this design. The explosive squib is removed and tested to provide assurance that the valves will actuate when

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.3.9 (continued)

required. The replacement charge for the explosive squib shall be from the same manufactured batch as the one fired or from another batch that has been certified by having one of the batch successfully fired. The Frequency of ~~18~~ 24 months on a STAGGERED TEST BASIS is considered adequate given the administrative controls on replacement charges and the frequent checks of circuit continuity (SR 3.6.1.3.4).

X

SR 3.6.1.3.10

The analyses in References 1 and 5 are based on leakage that is less than the specified leakage rate. Leakage through each MSIV must be ≤ 11.5 scfh when tested at ≥ P_t (25 psig). This ensures that MSIV leakage is properly accounted for in determining the overall primary containment leakage rate. The Frequency is specified in the Primary Containment Leakage Rate Testing Program.

SR 3.6.1.3.11

Surveillance of water tested lines ensures that sufficient inventory will be available to provide a sealing function for at least 30 days at a pressure of 1.1 Pa. Sufficient inventory ensures there is no path for leakage of primary containment atmosphere to the environment following a DBA. Leakage from containment isolation valves that terminate below the suppression pool water level may be excluded from the total leakage provided a sufficient fluid inventory is available as described in 10 CFR 50, Appendix J, Option B.

Leakage through valves in closed loop seismic class I lines that are considered as extensions of primary containment present no potential for leakage to the environment. Leakage from these valves will be measured, but will be excluded when computing the total leakage. This leakage will be reported as required by the Primary Containment Leakage Rate Testing Program.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.6.2

Each required (i.e., required to be OPERABLE for opening) vacuum breaker must be cycled to ensure that it opens adequately to perform its design function and returns to the fully closed position. This ensures that the safety analysis assumptions are valid. The Inservice Testing Program Frequency is based on operating experience that has demonstrated that the Frequency is adequate to assure OPERABILITY.

SR 3.6.1.6.3

24

Verification of the differential pressure required to open the vacuum breaker is necessary to ensure that the safety analysis assumption regarding vacuum breaker full open differential pressure of 0.5 psid is valid. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at an 18 month Frequency. The 18 month Frequency is further justified because of other surveillances performed at shorter Frequencies that convey the proper functioning status of each vacuum breaker.

Insert-A

24

REFERENCES

1. FSAR, Section 5.2.
2. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.
3. Technical Requirements Manual.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1.3 and SR 3.6.4.1.4 (continued)

if the secondary containment boundary is not intact. SR 3.6.4.1.4 demonstrates that two SGT subsystems can maintain ≥ 0.25 inches of vacuum water gauge at a stable flow rate ≤ 12,000 cfm. Both of these SRs are performed under neutral (< 5 mph) wind conditions. Therefore, these two tests are used to ensure secondary containment boundary integrity. Since these SRs are secondary containment tests, they need not be performed with each combination of SGT subsystems. The SGT subsystems are tested on a STAGGERED TEST BASIS, however, to ensure that in addition to the requirements of LCO 3.6.4.3, any two SGT subsystems will perform this test. Insert-A Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

REFERENCES

1. FSAR, Section 5.3.
2. FSAR, Section 14.6.3.
3. FSAR, Section 14.6.4.
4. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.2.1 (continued)

assumed in the safety analyses. The Frequency of this SR is 92 days.

SR 3.6.4.2.2

Verifying that each automatic SCIV closes on a secondary containment isolation signal is required to prevent leakage of radioactive material from secondary containment following a DBA or other accidents. This SR ensures that each automatic SCIV will actuate to the isolation position on a secondary containment isolation signal. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," overlaps this SR to provide complete testing of the safety function. The 18 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Insert-A

REFERENCES

1. FSAR, Section 14.6.3.
2. FSAR, Section 14.6.4.
3. Technical Requirements Manual.
4. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.2 (continued)

flow rate, and the physical properties of the activated charcoal (general use and following specific operations). This SR will also include a chemical smoke test to check the sealing of gaskets for filter housing doors.

Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.6.4.3.3

Insert-A

This SR verifies that each SGT subsystem starts on receipt of an actual or simulated initiation signal. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. ~~The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.6.2,~~ "Secondary Containment Isolation Instrumentation," overlaps this SR to provide complete testing of the safety function. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

SR 3.6.4.3.4

This SR verifies that the SGT decay heat discharge dampers are in the correct position. This ensures that the decay heat removal mode of SGT System operation is available. Operating experience has shown that these components usually pass the Surveillance when performed at the 12 month Frequency. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 41.
2. FSAR, Section 5.3.3.7.
3. FSAR, Section 14.6.
4. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.2.3 (continued)

Insert-A

Operating experience has shown that these components will usually pass the SR when performed at the 18 month Frequency. Therefore, this Frequency is concluded to be acceptable from a reliability standpoint.

REFERENCES

1. FSAR, Chapter 5.
2. FSAR, Chapter 14.
3. FSAR, Section 10.10.
4. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.3.4 (continued)

with respect to the outdoors to prevent unfiltered inleakage. The CREV System is designed to maintain this positive pressure at a flow rate of ≥ 2700 cfm and ≤ 3300 cfm to the control room in the pressurization mode. The Frequency of 18 24 months on a STAGGERED TEST BASIS is consistent with industry practice and other filtration systems SRs.

REFERENCES

1. FSAR, Section 10.12.
2. FSAR, Chapter 10.
3. FSAR, Chapter 14.
4. FSAR, Section 14.6.
5. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

ACTIONS

D.1, D.2.1, D.2.2, and D.2.3 (continued)

An alternative to Required Action D.1 is to immediately suspend activities that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk.

If applicable, CORE ALTERATIONS and movement of irradiated fuel assemblies in the secondary containment must be suspended immediately. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, actions must be initiated immediately to suspend OPDRVs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until the OPDRVs are suspended.

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1

This SR verifies that the heat removal capability of the system is sufficient to remove the control room heat load 24 assumed in the safety analyses. The SR consists of a combination of testing and calculation. The ~~18~~ month Frequency is appropriate since significant degradation of the Control Room AC System is not expected over this time period. X

REFERENCES

1. FSAR, Section 10.12.
2. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

ACTIONS (continued)

B.1

If the Main Turbine Bypass System cannot be restored to OPERABLE status or the APLHGR and MCPR limits for an inoperable Main Turbine Bypass System are not applied, THERMAL POWER must be reduced to < 25% RTP. As discussed in the Applicability section, operation at < 25% RTP results in sufficient margin to the required limits, and the Main Turbine Bypass System is not required to protect fuel integrity during abnormal operational transients. The 4 hour Completion Time is reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.5.1

Cycling each main turbine bypass valve through one complete cycle of full travel demonstrates that the valves are mechanically OPERABLE and will function when required. The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions. Operating experience has shown that these components usually pass the SR when performed at the 31 day Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

SR 3.7.5.2

The Main Turbine Bypass System is required to actuate automatically to perform its design function. This SR demonstrates that, with the required system initiation signals, the valves will actuate to their required position. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and because of the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown the 18 month Frequency, which is based on the refueling cycle, is acceptable from a reliability standpoint.

24

24

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.5.3

This SR ensures that the TURBINE BYPASS SYSTEM RESPONSE TIME is in compliance with the assumptions of the appropriate safety analysis. The response time limits are specified in the cycle specific transient analyses performed to support the preparation of FSAR, Appendix N, Supplemental Reload Licensing Report (Ref. 4). The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and because of the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown the 18 month Frequency, which is based on the refueling cycle, is acceptable from a reliability standpoint.

24

24

REFERENCES

1. FSAR, Section 7.11.3.3.
2. FSAR, Section 14.5.1.1.
3. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.
4. FSAR, Appendix N.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.5 (continued)

24 18 month Frequency is consistent with the recommendations of Regulatory Guide 1.9 (Ref. 8).

This SR is modified by a Note. In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, the Note requires that, if synchronized to offsite power, testing must be performed using a power factor ≤ 0.9. This power factor is chosen to be representative of the actual design basis inductive loading that the DG would experience.

SR 3.8.1.6

This Surveillance demonstrates that the DG automatically starts from the design basis actuation signal (LOCA signal). This test will also verify the start of the Unit 3 DGs aligned to the SGT and CREV Systems on an accident signal from Unit 2. In order to minimize the number of DGs involved in testing, demonstration of automatic starts of the Unit 3 DGs on an accident signal from Unit 2 may be performed in conjunction with testing to demonstrate automatic starts of the Unit 3 DGs on an accident signal from Unit 3. Insert-A ~~Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency.~~ Therefore, the Frequency is acceptable from a reliability standpoint.

To minimize wear and tear on the DGs, this SR has been modified by a Note which permits DG starts to be preceded by an engine prelube period followed by a warmup period.

SR 3.8.1.7

Demonstration once per 18 24 months that the DGs can start and run continuously at full load capability for an interval of not less than 24 hours — 22 hours of which is at a load equivalent to the continuous rating of the DG, and 2 hours of which is at a load equivalent to 105 percent to 110 percent of the continuous duty rating of the DG. The DG starts for this Surveillance can be performed either from standby or hot conditions. The provisions for prelube and

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.7 (continued)

warmup, discussed in SR 3.8.1.1, and for gradual loading, discussed in SR 3.8.1.2, are applicable to this SR.

In order to ensure that the DG is tested under load conditions that are as close to design conditions as possible, testing must be performed using a power factor ≤ 0.9. This power factor is chosen to be representative of the actual design basis inductive loading that the DG could experience. A load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

24

The 18 month Frequency is consistent with the recommendations of Regulatory Guide 1.9 (Ref. 8).

This Surveillance has been modified by a Note that states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary power factor transients above the limit do not invalidate the test.

SR 3.8.1.8

Under accident conditions (and loss of offsite power) loads are sequentially connected to the shutdown boards by automatic individual pump timers. The individual pump timers control the permissive and starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. This SR is demonstrated by performance of SR 3.3.5.1.5 for the Core Spray and LPCI pump timers, SR 3.7.2.3 for the EECW pump timers, and SR 3.8.1.9.b for the 480 V load shed logic timers. The allowable values for these timers ensure that sufficient time exists for the DG to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding ESF equipment time delays are not violated. Reference 2 provides a summary of the automatic loading of ESF shutdown boards.

24

The Frequency of 18 months is consistent with the recommendations of Regulatory Guide 1.9 (Ref. 8).

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.9

In the event of a DBA coincident with a loss of offsite power, the DGs are required to supply the necessary power to ESF systems so that the fuel, RCS, and containment design limits are not exceeded.

This Surveillance demonstrates the as designed operation of the standby power sources during a loss of offsite power actuation test signal in conjunction with an ECCS initiation signal. This test verifies all actions encountered from the loss of offsite power in conjunction with an ECCS initiation signal, including shedding of the nonessential loads and energization of the 4.16 kV shutdown boards and respective loads from the DG. It further demonstrates the capability of the DG to automatically achieve the required voltage and frequency within the specified time.

The requirement to verify the connection and power supply of permanent and auto-connected loads is intended to satisfactorily show the relationship of these loads to the DG loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential for undesired operation. For instance, Emergency Core Cooling Systems (ECCS) injection valves are not desired to be stroked open, some systems are not capable of being operated at full flow, and RHR systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of the connection and loading of these loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified. 24

The Frequency of 18 months takes into consideration plant conditions required to perform the Surveillance and is intended to be consistent with an expected fuel cycle length of 18 months.

24

This SR is modified by a Note. The reason for the Note is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.1 (continued)

in a fully charged state, while supplying adequate power to the connected DC loads. The voltage requirements are based on the nominal design voltage of the battery and are consistent with the initial voltages assumed in the battery sizing calculations. The 7 day Frequency is consistent with manufacturer recommendations and IEEE-450 (Ref. 7).

SR 3.8.4.2 and SR 3.8.4.5

Battery charger capability requirements are based on the design capacity of the chargers (Ref. 4). According to Regulatory Guide 1.32 (Ref. 8), the battery charger supply is required to be based on the largest combined demands of the various steady state loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state, irrespective of the status of the unit during these demand occurrences. The minimum required amperes and verification of the charger's ability to recharge the battery ensures that these requirements can be satisfied.

SR 3.8.4.2 verifies that the chargers are capable of charging the batteries after their designed duty cycle testing and ensures that the chargers will perform their design function. This SR is modified by a Note that allows performance of SR 3.8.4.5 in lieu of this Surveillance requirement. SR 3.8.4.5 verifies that the chargers are capable of charging the batteries after each discharge test and ensures that the chargers are capable of performing at maximum output. 24 SR 3.8.4.2 is performed at the same frequency as the 18 month service test (SR 3.8.4.3), while SR 3.8.4.5 is performed following the 60 month battery discharge test (SR 3.8.4.4).

SR 3.8.4.5 is modified by a Note. The Note is added to this SR to acknowledge that credit may be taken for unplanned events that satisfy the Surveillance.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.4.3

A battery service test is a special test of the battery's capability, as found, to satisfy the design requirements (battery duty cycle) of the DC electrical power system. The discharge rate and test length corresponds to the design duty cycle requirements as specified in Reference 4.

5/26/98

The Frequency of 18 months is consistent with the ~~recommendations of Regulatory Guide 1.32 (Ref. 8) and~~ Regulatory Guide 1.129 (Ref. 9), which state, in part, that the battery service test should be performed with intervals between tests not to exceed 18 months.

24

plant conditions required to perform the Surveillance, plus other supporting Surveillance Requirements.

This SR is modified by a Note that allows the performance of a modified performance discharge test in lieu of a service test once per 60 months. The modified performance discharge test is a simulated duty cycle consisting of just two rates; the one minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance test, both of which envelope the duty cycle of the service test. Since the ampere-hours removed by a rated one minute discharge represents a very small portion of the battery capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test. The battery terminal voltage for the modified performance discharge test should remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test.

A modified discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test should be identical to those specified for a service test.

(continued)

BASES

REFERENCES (continued)

3. IEEE Standard 308.

4. FSAR, Sections 8.5 and 8.6.

5. FSAR, Chapters 6 and 14.

6. Regulatory Guide 1.93.

7. IEEE Standard 450-1995.

8. Regulatory Guide 1.32, February 1977.

9. [Not Used] ~~Regulatory Guide 1.129, December 1974.~~

10. IEEE Standard 485, 1983.

11. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.1.7.7 and SR 3.1.7.8

These Surveillances ensure that there is a functioning flow path from the boron solution storage tank to the RPV, including the firing of an explosive valve. The replacement charge for the explosive valve shall be from the same manufactured batch as the one fired or from another batch that has been certified by having one of that batch successfully fired. Additionally, replacement charges shall be selected such that the age of charge in service shall not exceed five years from the manufacturer's assembly date. The pump and explosive valve tested should be alternated such that both complete flow paths are tested every 36 48 months at alternating 18 24 month intervals. The Surveillance may be performed in separate steps to prevent injecting boron into the RPV. An acceptable method for verifying flow from the pump to the RPV is to pump demineralized water from a test tank through one SLC subsystem and into the RPV. The 18 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Insert-A Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency; therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Demonstrating that all piping between the boron solution storage tank and the suction inlet to the injection pumps is unblocked ensures that there is a functioning flow path for injecting the sodium pentaborate solution. An acceptable method for verifying that the suction piping is unblocked is to pump from the storage tank to the storage tank. The 18 24 month Frequency is acceptable since there is a low probability that the subject piping will be blocked due to precipitation of the boron from solution in the piping or by other means.

SR 3.1.7.9

The enriched sodium pentaborate solution is made by combining stoichiometric quantities of borax and boric acid in demineralized water. Isotopic tests on these chemicals

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.1.7.9 (continued)

24

to verify the actual B-10 enrichment must be performed at least every 18 months and after addition of boron to the SLC tank in order to ensure that the proper B-10 atom percentage is being used and SR 3.1.7.5 will be met. The sodium pentaborate enrichment must be calculated within 24 hours and verified by analysis within 30 days.

X

SR 3.1.7.10

SR 3.1.7.10 verifies that each valve in the system is in its correct position, but does not apply to the squib (i.e., explosive) valves. Verifying the correct alignment for manual, power operated, and automatic valves in the SLC System Flowpath provides assurance that the proper flow paths will exist for system operation. A valve is also allowed to be in the nonaccident position provided it can be aligned to the accident position from the control room, or locally by a dedicated operator at the valve control. This is acceptable since the SLC System is a manually initiated system. This surveillance also does not apply to valves that are locked, sealed, or otherwise secured in position since they are verified to be in the correct position prior to locking, sealing or securing. This verification of valve alignment does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves. The 31 day Frequency is based on engineering judgment and is consistent with the procedural controls governing valve operation that ensures correct valve positions.

REFERENCES

1. 10 CFR 50.62.

2. FSAR, Section 3.8.4.

3. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.1.8.3

SR 3.1.8.3 is an integrated test of the SDV vent and drain valves to verify total system performance. After receipt of a simulated or actual scram signal, the closure of the SDV vent and drain valves is verified. The closure time of 60 seconds after receipt of a scram signal is acceptable based on the bounding analysis for release of reactor coolant outside containment (Ref. 2). Similarly, after receipt of a simulated or actual scram reset signal, the opening of the SDV vent and drain valves is verified. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.1.1 and the scram time testing of control rods in LCO 3.1.3 overlap this Surveillance to provide complete testing of the assumed safety function. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency; therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

24

Insert-A

REFERENCES

1. FSAR, Section 3.4.5.3.1.
2. FSAR, Section 14.6.5.
3. 10 CFR 100.
4. FSAR, Section 6.5.
5. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.8, SR 3.3.1.1.12 and SR 3.3.1.1.16 (continued)

interface connections into the RPS trip systems from the voter channels. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology. The 184 day Frequency of SR 3.3.1.1.16 for the APRM Functions is based on the reliability analysis of Reference 12. (NOTE: The actual voting logic of the 2-out-of-4 Voter Function is tested as part of SR 3.3.1.1.14.) A Note for SR 3.3.1.1.16 is provided that requires the APRM Function 2.a SR to be performed within 12 hours of entering MODE 2 from MODE 1. Testing of the MODE 2 APRM Function cannot be performed in MODE 1 without utilizing jumpers or lifted leads. This Note allows entry into MODE 2 from MODE 1 if the associated frequency is not met per SR 3.0.2. Twelve hours is based on operating experience and in consideration of providing a reasonable time in which to complete the SR.

The 184 day Frequency of SR 3.3.1.1.16 for the scram pilot air header low pressure trip function is based on the functional reliability previously demonstrated by this function, the need for minimizing the radiation exposure associated with the functional testing of this function, and the increased risk to plant availability while the plant is in a half-scram condition during the performance of the functional testing versus the limited increase in reliability that would be obtained by the more frequent functional testing.

24

The 18 month Frequency of SR 3.3.1.1.12 is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

Insert-A

SR 3.3.1.1.9, SR 3.3.1.1.10 and SR 3.3.1.1.13

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies that the channel responds to the measured parameter within the necessary

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.14

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required trip logic for a specific channel. The functional testing of control rods (LCO 3.1.3), and SDV vent and drain valves (LCO 3.1.8), overlaps this Surveillance to provide complete testing of the assumed safety function.

24

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

Insert-A

Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

The LOGIC SYSTEM FUNCTIONAL TEST for APRM Function 2.e simulates APRM trip conditions at the 2-out-of-4 voter channel inputs to check all combinations of two tripped inputs to the 2-out-of-4 logic in the voter channels and APRM related redundant RPS relays.

SR 3.3.1.1.15

This SR ensures that scrams initiated from the Turbine Stop Valve – Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure – Low Functions will not be inadvertently bypassed when THERMAL POWER is $\geq$ 30% RTP. This involves calibration of the bypass channels. Adequate margins for the instrument setpoint methodologies are incorporated into the actual setpoint.

If any bypass channel's setpoint is nonconservative (i.e., the Functions are bypassed at $\geq$ 30% RTP, either due to open main turbine bypass valve(s) or other reasons), then the affected Turbine Stop Valve – Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure – Low Functions are considered inoperable. Alternatively, the bypass channel can be placed in the conservative condition (nonbypass). If placed in the nonbypass condition (Turbine Stop Valve – Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure – Low Functions are enabled), this SR is met and the channel is considered OPERABLE.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.2.1.6

A CHANNEL FUNCTIONAL TEST is performed for the Reactor Mode Switch – Shutdown Position Function to ensure that the entire channel will perform the intended function. The CHANNEL FUNCTIONAL TEST for the Reactor Mode Switch – Shutdown Position Function is performed by attempting to withdraw any control rod with the reactor mode switch in the shutdown position and verifying a control rod block occurs.

As noted in the SR, the Surveillance is not required to be performed until 1 hour after the reactor mode switch is in the shutdown position, since testing of this interlock with the reactor mode switch in any other position cannot be performed without using jumpers, lifted leads, or movable links. This allows entry into MODES 3 and 4 if the 18 month Frequency is not met per SR 3.0.2. The 1 hour allowance is based on operating experience and in consideration of providing a reasonable time in which to complete the SRs.

24

24

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

Insert-A

Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

SR 3.3.2.1.7

The RWM will only enforce the proper control rod sequence if the rod sequence is properly input into the RWM computer. This SR ensures that the proper sequence is loaded into the RWM so that it can perform its intended function. The Surveillance is performed once prior to declaring RWM OPERABLE following loading of sequence into RWM, since this is when rod sequence input errors are possible.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.2.2.3

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequency is based upon the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.2.2.4

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required trip logic for a specific channel. The system functional test of the feedwater and main turbine valves is included as part of this Surveillance and overlaps the LOGIC SYSTEM FUNCTIONAL TEST to provide complete testing of the assumed safety function. Therefore, if a valve is incapable of operating, the associated instrumentation would also be inoperable. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

24

Insert-A

REFERENCES

1. FSAR, Section 14.5.7.
2. GENE-770-06-1, "Bases for Changes to Surveillance Test Intervals and Allowed Out-Of-Service Times for Selected Instrumentation Technical Specifications," February 1991.
3. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

ACTIONS (continued)

A.1

Condition A addresses the situation where one or more required Functions of the Backup Control System is inoperable. This includes any Function listed in Table B 3.3.3.2-1, as well as the control and transfer switches.

The Required Action is to restore the Function to OPERABLE status within 30 days. The Completion Time is based on operating experience and the low probability of an event that would require evacuation of the control room.

B.1

If the Required Action and associated Completion Time of Condition A are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours. The allowed Completion Time is reasonable, based on operating experience, to reach the required MODE from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.3.3.2.1

SR 3.3.3.2.1 verifies each required Backup Control System transfer switch and control circuit performs the intended function. This verification is performed from the backup control panel and locally, as appropriate. Operation of the equipment from the backup control panel is not necessary. The Surveillance can be satisfied by performance of a continuity check. This will ensure that if the control room becomes inaccessible, the plant can be placed and maintained in MODE 3 from the backup control panel and the local control stations. ~~Operating experience demonstrates that Backup Control System control channels usually pass the Surveillance when performed at the 18 month Frequency.~~

Insert-A

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.4.1.3 (continued)

The Frequency is based upon the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.4.1.4

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required trip logic for a specific channel. The system functional test of the pump breakers is included as a part of this test, overlapping the LOGIC SYSTEM FUNCTIONAL TEST, to provide complete testing of the associated safety function. Therefore, if a breaker is incapable of operating, the associated instrument channel(s) would also be inoperable.

24

Insert-A

The ~~18~~ month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. ~~Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.~~

REFERENCES

1. FSAR, Figure 7.9-2 (EOC-RPT logic diagram).
2. FSAR, Section 7.9.4.5.
3. FSAR, Sections 14.5.1.1 and 14.5.1.3.
4. FSAR, Section 4.3.5.
5. GENE-770-06-1, "Bases For Changes To Surveillance Test Intervals And Allowed Out-Of-Service Times For Selected Instrumentation Technical Specifications," February 1991.
6. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.4.2.4

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required trip logic for a specific channel. The system functional test of the pump breakers is included as part of this Surveillance and overlaps the LOGIC SYSTEM FUNCTIONAL TEST to provide complete testing of the assumed safety function. Therefore, if a breaker is incapable of operating, the associated instrument channel(s) would be inoperable.

24

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

Insert-A

REFERENCES

1. FSAR Section 7.19.
2. GENE-770-06-1, "Bases for Changes To Surveillance Test Intervals and Allowed Out-of-Service Times For Selected Instrumentation Technical Specifications," February 1991.
3. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.5.1.6 (continued)

Surveillance to complete testing of the assumed safety function.

24

Insert-A

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

REFERENCES

1. FSAR, Section 8.5.
2. FSAR, Section 6.5.
3. FSAR, Chapter 14.
4. NEDC-30936-P-A, "BWR Owners' Group Technical Specification Improvement Analyses for ECCS Actuation Instrumentation, Part 2," December 1988.
5. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.
6. NUREG-0737, "Clarification of TMI Action Plan Requirements," October 31, 1980.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.5.2.3

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequency of SR 3.3.5.2.3 is based upon the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.5.2.4

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required initiation logic for a specific channel. The system functional testing performed in LCO 3.5.3 overlaps this Surveillance to provide complete testing of the safety function.

24

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

Insert-A

REFERENCES

1. GENE-770-06-2, "Addendum to Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," February 1991.

2. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.6.1.6

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required isolation logic for a specific channel. The system functional testing performed on PCIVs in LCO 3.6.1.3 overlaps this Surveillance to provide complete testing of the assumed safety function. The LOGIC SYSTEM FUNCTIONAL TEST shall include a calibration of time delay relays and timers necessary for proper functioning of the logic. The 24 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

Insert-A

~~Operating experience has shown these components usually pass the Surveillance when performed at the Frequency provided.~~

REFERENCES

1. FSAR, Section 6.5.

2. FSAR, Chapter 14.

3. NEDO-31466, "Technical Specification Screening Criteria Application and Risk Assessment," November 1987.

4. FSAR, Section 4.9.3.

5. NEDC-31677P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation," July 1990.

6. NEDC-30851P-A Supplement 2, "Technical Specifications Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation," March 1989.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.6.2.2 (continued)

This Surveillance for Functions 3 and 4 shall consist of verifying the High Voltage Power Supply (HVPS) voltage at the sensor and convertors (detectors) is within its design limits. A CHANNEL FUNCTIONAL TEST as defined in Section 1.1, "Definitions" shall be performed once per 18 months as part of the CHANNEL CALIBRATION for Functions 3 and 4.

SR 3.3.6.2.3

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequency of SR 3.3.6.2.3 is based on the magnitude of equipment drift in the setpoint analysis.

SR 3.3.6.2.4

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required isolation logic for a specific channel. The system functional testing performed on SCIVs and the SGT System in LCO 3.6.4.2 and LCO 3.6.4.3, respectively, overlaps this Surveillance to provide complete testing of the assumed safety function.

24

The ~~18~~ month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

Operating experience with these components supports performance of these Surveillances at their designated Frequencies.

~~Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.~~ Therefore, the Frequency was found to be acceptable from a reliability standpoint.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.7.1.2 (continued)

The Frequency of 92 days is based on the reliability analyses of References 3 and 4.

This Surveillance for Functions 3 and 4 shall consist of verifying the High Voltage Power Supply (HVPS) voltage at the Sensor and Convertors (detectors) is within its design limits. A CHANNEL FUNCTIONAL TEST as defined in Section 1.1, "Definitions" shall be performed once per 18 months as part of the CHANNEL CALIBRATION for Functions 3 and 4.

SR 3.3.7.1.3 and SR 3.3.7.1.5

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequencies are based upon the magnitude of equipment drift in the setpoint analysis.

SR 3.3.7.1.4 and SR 3.3.7.1.6

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required initiation logic for a specific channel. The system functional testing performed in LCO 3.7.3, "Control Room Emergency Ventilation (CREV) System," overlaps this Surveillance to provide complete testing of the assumed safety function.

The 184 day Frequency for Function 5 is based on equipment capability. The ~~18~~ 24 month Frequency for Functions 1, 2, 3, and 4 is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at their designated Frequencies.

Operating experience with these components supports performance of these Surveillances at their designated Frequencies.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.8.1.1 and SR 3.3.8.1.2 (continued)

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency is based upon the calibration interval assumed in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.8.1.3

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required actuation logic for a specific channel. The system functional testing performed in LCO 3.8.1 and LCO 3.8.2 overlaps this Surveillance to provide complete testing of the assumed safety functions.

24

Insert-A

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

REFERENCES

1. FSAR, Figure 8.4-4.

2. FSAR, Section 6.5.

3. FSAR, Section 8.5.4.

4. FSAR, Chapter 14.

5. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.8.2.3 (continued)

24

Insert-A

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

REFERENCES

1. FSAR, Section 7.2.3.2.
2. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.4.3.2

A manual actuation of each required S/RV is performed to verify that, mechanically, the valve is functioning properly and no blockage exists in the valve discharge line. This can be demonstrated by the response of the turbine control valves or bypass valves, by a change in the measured steam flow, or by any other method suitable to verify steam flow. Adequate reactor steam dome pressure must be available to perform this test to avoid damaging the valve. Also, adequate steam flow must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the S/RVs divert steam flow upon opening. Sufficient time is therefore allowed after the required pressure is achieved to perform this test. Adequate pressure at which this test is to be performed is 920 psig (the pressure recommended by the valve manufacturer). Adequate steam flow is represented by at least 3 turbine bypass valves open. Plant startup is allowed prior to performing this test because valve OPERABILITY and the setpoints for overpressure protection are verified, per ASME Code requirements, prior to valve installation. Therefore, this SR is modified by a Note that states the Surveillance is not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. The 12 hours allowed for manual actuation after the required pressure is reached is sufficient to achieve stable conditions for testing and provides a reasonable time to complete the SR. If a valve fails to actuate due only to the failure of the solenoid but is capable of opening on overpressure, the safety function of the S/RV is considered OPERABLE.

24

Insert- A

The ~~18~~ month Frequency was developed based on the S/RV tests ~~required by the ASME Boiler and Pressure Vessel Code, Section XI (Ref. 3).~~ ~~Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.~~ Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.1.6, SR 3.5.1.7, and SR 3.5.1.8 (continued)

steam flow must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the HPCI System diverts steam flow. Reactor steam pressure must be ≥ 920 psig to perform SR 3.5.1.7 and ≥ 150 psig to perform SR 3.5.1.8. Adequate steam flow isrepresented by reactor power ≥ 2.5% for SR 3.5.1.7 and at least two turbine bypass valves open for SR 3.5.1.8. Therefore, sufficient time is allowed after adequate pressure and flow are achieved to perform these tests. Reactor startup is allowed prior to performing the low pressure Surveillance test because the reactor pressure is low and the time allowed to satisfactorily perform the Surveillance test is short. Alternately, the low pressure Surveillance test may be performed prior to startup using an auxiliary steam supply. The reactor pressure is allowed to be increased to normal operating pressure since it is assumed that the low pressure test has been satisfactorily completed and there is no indication or reason to believe that HPCI is inoperable.

Therefore, SR 3.5.1.7 and SR 3.5.1.8 are modified by Notes that state the Surveillances are not required to be performed until 12 hours after the reactor steam pressure and flow are adequate to perform the test.

24

The Frequency for SR 3.5.1.6 and SR 3.5.1.7 is in accordance with the Inservice Testing Program requirements. The 18 month Frequency for SR 3.5.1.8 is based on the need to perform the Surveillance under the conditions that apply just prior to or during a startup from a plant outage. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Insert-A

SR 3.5.1.9

The ECCS subsystems are required to actuate automatically to perform their design functions. This Surveillance verifies that, with a required system initiation signal (actual or simulated), the automatic initiation logic of HPCI, CS, and

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.1.9 (continued)

LPCI will cause the systems or subsystems to operate as designed, including actuation of the system throughout its emergency operating sequence, automatic pump startup and actuation of all automatic valves to their required positions. This SR also ensures that the HPCI System will automatically restart on an RPV low-low water level (Level 2) signal received subsequent to an RPV high water level (Level 8) trip and that the suction is automatically transferred from the CST to the suppression pool. The LOGIC SYSTEM FUNCTIONAL TEST performed in LCO 3.3.5.1 overlaps this Surveillance to provide complete testing of the assumed safety function.

24

The 18 month Frequency is based on the need to perform the Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

Insert-A

Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

This SR is modified by a Note that excludes vessel injection/spray during the Surveillance. Since all active components are testable and full flow can be demonstrated by recirculation through the test line, coolant injection into the RPV is not required during the Surveillance.

SR 3.5.1.10

The ADS designated S/RVs are required to actuate automatically upon receipt of specific initiation signals. A system functional test is performed to demonstrate that the mechanical portions of the ADS function (i.e., solenoids) operate as designed when initiated either by an actual or simulated initiation signal, causing proper actuation of all the required components. SR 3.5.1.11 and the LOGIC SYSTEM FUNCTIONAL TEST performed in LCO 3.3.5.1 overlap this Surveillance to provide complete testing of the assumed safety function.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.1.10 (continued)

24

The 18 month Frequency is based on the need to perform the Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Insert-A

This SR is modified by a Note that excludes valve actuation. This prevents an RPV pressure blowdown.

SR 3.5.1.11

A manual actuation of each ADS valve is performed to verify that the valve and solenoid are functioning properly and that no blockage exists in the S/RV discharge lines. This is demonstrated by the response of the turbine control or bypass valve or by a change in the measured flow or by any other method suitable to verify steam flow. Adequate reactor steam dome pressure must be available to perform this test to avoid damaging the valve. Also, adequate steam flow must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the ADS valves divert steam flow upon opening. Sufficient time is therefore allowed after the required pressure and flow are achieved to perform this SR. Adequate pressure at which this SR is to be performed is 920 psig (the pressure recommended by the valve manufacturer). Adequate steam flow is represented by at least 3 turbine bypass valves open. Reactor startup is allowed prior to performing this SR because valve OPERABILITY and the setpoints for overpressure protection are verified, per ASME requirements, prior to valve installation. Therefore, this SR is modified by a Note that states the Surveillance is not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. The 12 hours allowed for manual actuation after the required pressure is reached is sufficient to achieve stable conditions and provides adequate time to complete the Surveillance. SR 3.5.1.10 and the LOGIC SYSTEM FUNCTIONAL TEST performed in LCO 3.3.5.1

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.1.11 (continued)

overlap this Surveillance to provide complete testing of the assumed safety function. 24

Insert-A

The Frequency of 18 months is based on the need to perform the Surveillance under the conditions that apply just prior to or during a startup from a plant outage. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.5.1.12

24

Verification every 18 months of the automatic transfer capability between the normal and alternate power supply (480 V shutdown boards) for the RMOV boards which supply power for each LPCI subsystem inboard injection valve and each recirculation pump discharge valve demonstrates that AC electrical power is available to operate these valves following loss of power to one of the 4 kV shutdown boards. The ability to provide power to the inboard injection valve and the recirculation pump discharge valve from two independent 4 kV shutdown boards ensures that single failure of an EDG will not result in the failure of both LPCI pumps in one subsystem. Therefore, the failure of the automatic transfer capability will result in the inoperability of the affected LPCI subsystem. The 18 month Frequency has been found to be acceptable based on engineering judgment and operating experience.

24

REFERENCES

1. FSAR, Section 6.4.3.
2. FSAR, Section 6.4.4.
3. FSAR, Section 6.4.1.
4. FSAR, Section 6.4.2.
5. FSAR, Section 14.6.3.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.3.3 and SR 3.5.3.4 (continued)

reactor steam pressure and flow are adequate to perform the test.

24

A 92 day Frequency for SR 3.5.3.3 is consistent with the Inservice Testing Program requirements. The 18 month Frequency for SR 3.5.3.4 is based on the need to perform the Surveillance under conditions that apply just prior to or during a startup from a plant outage. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Insert-A

SR 3.5.3.5

The RCIC System is required to actuate automatically in order to perform its design function satisfactorily. This Surveillance verifies that, with a required system initiation signal (actual or simulated), the automatic initiation logic of the RCIC System will cause the system to operate as designed, including actuation of the system throughout its emergency operating sequence; that is, automatic pump startup and actuation of all automatic valves to their required positions. This test also ensures the RCIC System will automatically restart on an RPV low-low water level (Level 2) signal received subsequent to an RPV high water level (Level 8) trip. The LOGIC SYSTEM FUNCTIONAL TEST performed in LCO 3.3.5.2 overlaps this Surveillance to provide complete testing of the assumed safety function.

24

The 18 month Frequency is based on the need to perform the Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Insert-A

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1.1 (continued)

this SR. The impact of the failure to meet this SR must be evaluated against the Type A, B, and C acceptance criteria of the Primary Containment Leakage Rate Testing Program. As left leakage prior to the first startup after performing a required leakage test is required to be < 0.6 L_a for combined Type B and C leakage, and < 0.75 L_a for overall Type A leakage. At all other times between required leakage rate tests, the acceptance criteria is based on an overall Type A leakage limit of ≤ 1.0 L_a. At ≤ 1.0 L_a the offsite dose consequences are bounded by the assumptions of the safety analysis. The Frequency is specified in the Primary Containment Leakage Rate Testing Program.

SR 3.6.1.1.2

Maintaining the pressure suppression function of primary containment requires limiting the leakage from the drywell to the suppression chamber. Thus, if an event were to occur that pressurized the drywell, the steam would be directed through the downcomers into the suppression pool. This SR measures drywell to suppression chamber differential pressure during a 10 minute period to ensure that the leakage paths that would bypass the suppression pool are within allowable limits.

24

Satisfactory performance of this SR can be achieved by establishing a known differential pressure between the drywell and the suppression chamber and verifying that the pressure in either the suppression chamber or the drywell does not change by more than 0.25 inch of water per minute over a 10 minute period. The leakage test is performed every 18 months. The 18 month Frequency was developed considering it is prudent that this Surveillance be performed during a unit outage and also in view of the fact that component failures that might have affected this test are identified by other primary containment SRs.

XX

24

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.3.7

Automatic PCIVs close on a primary containment isolation signal to prevent leakage of radioactive material from primary containment following a DBA. This SR ensures that each automatic PCIV will actuate to its isolation position on a primary containment isolation signal. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.6.1 overlaps this SR to provide complete testing of the safety function. The 18 month Frequency was developed considering it is prudent that this Surveillance be performed only during a unit outage since isolation of penetrations would eliminate cooling water flow and disrupt the normal operation of many critical components. ~~Operating experience has shown that these components usually pass this Surveillance when performed at the 18 month Frequency.~~ Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

24

Insert-A

SR 3.6.1.3.8

This SR requires a demonstration that each reactor instrumentation line excess flow check valve (EFCV) is OPERABLE by verifying that the valve actuates to the isolation position on an actual or simulated instrument line break signal. This SR provides assurance that the instrumentation line EFCVs will perform so that the radiological consequences will not exceed the predicted radiological consequences during events evaluated in Reference 5. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. ~~Operating experience has shown that these components usually pass this Surveillance when performed at the 18 month Frequency.~~ Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

24

Insert-A

SR 3.6.1.3.9

The TIP shear isolation valves are actuated by explosive charges. An in place functional test is not possible with this design. The explosive squib is removed and tested to provide assurance that the valves will actuate when

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.3.9 (continued)

required. The replacement charge for the explosive squib shall be from the same manufactured batch as the one fired or from another batch that has been certified by having one of the batch successfully fired. The Frequency of 18 months on a STAGGERED TEST BASIS is considered adequate given the administrative controls on replacement charges and the frequent checks of circuit continuity (SR 3.6.1.3.4). 24

SR 3.6.1.3.10

The analyses in References 1 and 5 are based on leakage that is less than the specified leakage rate. Leakage through each MSIV must be ≤ 11.5 scfh when tested at ≥ P_t (25 psig). This ensures that MSIV leakage is properly accounted for in determining the overall primary containment leakage rate. The Frequency is specified in the Primary Containment Leakage Rate Testing Program.

SR 3.6.1.3.11

Surveillance of water tested lines ensures that sufficient inventory will be available to provide a sealing function for at least 30 days at a pressure of 1.1 Pa. Sufficient inventory ensures there is no path for leakage of primary containment atmosphere to the environment following a DBA. Leakage from containment isolation valves that terminate below the suppression pool water level may be excluded from the total leakage provided a sufficient fluid inventory is available as described in 10 CFR 50, Appendix J, Option B.

Leakage through valves in closed loop seismic class I lines that are considered as extensions of primary containment present no potential for leakage to the environment. Leakage from these valves will be measured, but will be excluded when computing the total leakage. This leakage will be reported as required by the Primary Containment Leakage Rate Testing Program.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.6.2

Each required (i.e., required to be OPERABLE for opening) vacuum breaker must be cycled to ensure that it opens adequately to perform its design function and returns to the fully closed position. This ensures that the safety analysis assumptions are valid. The Inservice Testing Program Frequency is based on operating experience that has demonstrated that the Frequency is adequate to assure OPERABILITY.

SR 3.6.1.6.3

24

Verification of the differential pressure required to open the vacuum breaker is necessary to ensure that the safety analysis assumption regarding vacuum breaker full open differential pressure of 0.5 psid is valid. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at an 18 month Frequency. The 18 month Frequency is further justified because of other surveillances performed at shorter Frequencies that convey the proper functioning status of each vacuum breaker.

Insert-A

24

REFERENCES

1. FSAR, Section 5.2.
2. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.
3. Technical Requirements Manual.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1.3 and SR 3.6.4.1.4 (continued)

if the secondary containment boundary is not intact. SR 3.6.4.1.4 demonstrates that two SGT subsystems can maintain ≥ 0.25 inches of vacuum water gauge at a stable flow rate ≤ 12,000 cfm. Both of these SRs are performed under neutral (< 5 mph) wind conditions. Therefore, these two tests are used to ensure secondary containment boundary integrity. Since these SRs are secondary containment tests, they need not be performed with each combination of SGT subsystems. The SGT subsystems are tested on a STAGGERED TEST BASIS, however, to ensure that in addition to the requirements of LCO 3.6.4.3, ~~any two SGT subsystems will perform this test.~~ Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Insert-A

REFERENCES

1. FSAR, Section 5.3.
2. FSAR, Section 14.6.3.
3. FSAR, Section 14.6.4.
4. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.2.1 (continued)

assumed in the safety analyses. The Frequency of this SR is 92 days.

SR 3.6.4.2.2

Verifying that each automatic SCIV closes on a secondary containment isolation signal is required to prevent leakage of radioactive material from secondary containment following a DBA or other accidents. This SR ensures that each automatic SCIV will actuate to the isolation position on a secondary containment isolation signal. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," overlaps this SR to provide complete testing of the safety function. The 18 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency. Insert-A Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

REFERENCES

1. FSAR, Section 14.6.3.
2. FSAR, Section 14.6.4.
3. Technical Requirements Manual.
4. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.2 (continued)

flow rate, and the physical properties of the activated charcoal (general use and following specific operations). This SR will also include a chemical smoke test to check the sealing of gaskets for filter housing doors.

Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.6.4.3.3

Insert-A

This SR verifies that each SGT subsystem starts on receipt of an actual or simulated initiation signal. While this ~~Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.~~ The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," overlaps this SR to provide complete testing of the safety function. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

SR 3.6.4.3.4

This SR verifies that the SGT decay heat discharge dampers are in the correct position. This ensures that the decay heat removal mode of SGT System operation is available. Operating experience has shown that these components usually pass the Surveillance when performed at the 12 month Frequency. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 41.
2. FSAR, Section 5.3.3.7.
3. FSAR, Section 14.6.
4. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.2.3 (continued)

Insert A

~~Operating experience has shown that these components will usually pass the SR when performed at the 18 month Frequency.~~ Therefore, this Frequency is concluded to be acceptable from a reliability standpoint.

REFERENCES

1. FSAR, Chapter 5.
2. FSAR, Chapter 14.
3. FSAR, Section 10.10.
4. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.3.4 (continued)

with respect to the outdoors to prevent unfiltered inleakage. The CREV System is designed to maintain this positive pressure at a flow rate of ≥ 2700 cfm and ≤ 3300 cfm to the control room in the pressurization mode. The Frequency of 18 months on a STAGGERED TEST BASIS is consistent with industry practice and other filtration systems SRs.

24

REFERENCES

1. FSAR, Section 10.12.
2. FSAR, Chapter 10.
3. FSAR, Chapter 14.
4. FSAR, Section 14.6.
5. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

ACTIONS

D.1, D.2.1, D.2.2, and D.2.3 (continued)

An alternative to Required Action D.1 is to immediately suspend activities that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk.

If applicable, CORE ALTERATIONS and movement of irradiated fuel assemblies in the secondary containment must be suspended immediately. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, actions must be initiated immediately to suspend OPDRVs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until the OPDRVs are suspended.

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1

This SR verifies that the heat removal capability of the system is sufficient to remove the control room heat load 24 assumed in the safety analyses. The SR consists of a combination of testing and calculation. The 18 month Frequency is appropriate since significant degradation of the Control Room AC System is not expected over this time period.

REFERENCES

1. FSAR, Section 10.12.

2. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

ACTIONS (continued)

B.1

If the Main Turbine Bypass System cannot be restored to OPERABLE status or the APLHGR and MCPR limits for an inoperable Main Turbine Bypass System are not applied, THERMAL POWER must be reduced to < 25% RTP. As discussed in the Applicability section, operation at < 25% RTP results in sufficient margin to the required limits, and the Main Turbine Bypass System is not required to protect fuel integrity during abnormal operational transients. The 4 hour Completion Time is reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.5.1

Cycling each main turbine bypass valve through one complete cycle of full travel demonstrates that the valves are mechanically OPERABLE and will function when required. The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions. Operating experience has shown that these components usually pass the SR when performed at the 31 day Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

SR 3.7.5.2

The Main Turbine Bypass System is required to actuate automatically to perform its design function. This SR demonstrates that, with the required system initiation signals, the valves will actuate to their required position. The 24 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and because of the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown the 24 18 month Frequency, which is based on the refueling cycle, is acceptable from a reliability standpoint. X X

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.5.3

This SR ensures that the TURBINE BYPASS SYSTEM RESPONSE TIME is in compliance with the assumptions of the appropriate safety analysis. The response time limits are specified in the cycle specific transient analyses performed to support the preparation of FSAR, Appendix N, Supplemental Reload Licensing Report (Ref. 4). The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and because of the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown the 18 month Frequency, which is based on the refueling cycle, is acceptable from a reliability standpoint.

24

24

REFERENCES

1. FSAR, Section 7.11.3.3.
2. FSAR, Section 14.5.1.1.
3. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.
4. FSAR, Appendix N.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.5 (continued)

24

18 month Frequency is consistent with the recommendations of Regulatory Guide 1.9 (Ref. 8).

This SR is modified by a Note. In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, the Note requires that, if synchronized to offsite power, testing must be performed using a power factor ≤ 0.9. This power factor is chosen to be representative of the actual design basis inductive loading that the DG would experience.

SR 3.8.1.6

This Surveillance demonstrates that the DG automatically starts from the design basis actuation signal (LOCA signal). This test will also verify the start of the Unit 1 and 2 DGs aligned to the SGT and CREV Systems on an accident signal from Unit 3. In order to minimize the number of DGs involved in testing, demonstration of automatic starts of the Unit 1 and 2 DGs on an accident signal from Unit 3 may be performed in conjunction with testing to demonstrate automatic starts of the Unit 1 and 2 DGs on an accident signal from Unit 1 or 2. ~~Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency.~~ Therefore, the Frequency is acceptable from a reliability standpoint.

Insert-A

To minimize wear and tear on the DGs, this SR has been modified by a Note which permits DG starts to be preceded by an engine prelube period followed by a warmup period.

SR 3.8.1.7

24

Demonstration once per 18 months that the DGs can start and run continuously at full load capability for an interval of not less than 24 hours—22 hours of which is at a load equivalent to the continuous rating of the DG, and 2 hours of which is at a load equivalent to the 105 percent to 110 percent of the continuous duty rating of the DG. The DG starts for this Surveillance can be performed either from standby or hot conditions. The provisions for prelube and

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.7 (continued)

warmup, discussed in SR 3.8.1.1 and for gradual loading, discussed in SR 3.8.1.2, are applicable to this SR.

In order to ensure that the DG is tested under load conditions that are as close to design conditions as possible, testing must be performed using a power factor ≤ 0.9. This power factor is chosen to be representative of the actual design basis inductive loading that the DG could experience. A load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

24

The 18 month Frequency is consistent with the recommendations of Regulatory Guide 1.9 (Ref. 8).

This Surveillance has been modified by a Note that states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary power factor transients above the limit do not invalidate the test.

SR 3.8.1.8

Under accident conditions (and loss of offsite power) loads are sequentially connected to the shutdown boards by automatic individual pump timers. The individual pump timers control the permissive and starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. This SR is demonstrated by performance of SR 3.3.5.1.5 for the Core Spray and LPCI pump timers, SR 3.7.2.3 for the EECW pump timers, and SR 3.8.1.9.b for the 480 V load shed logic timers. The allowable values for these timers ensure that sufficient time exists for the DG to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding ESF equipment time delays are not violated. Reference 2 provides a summary of the automatic loading of ESF shutdown boards.

24

The Frequency of 18 months is consistent with the recommendations of Regulatory Guide 1.9 (Ref. 8).

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.9

In the event of a DBA coincident with a loss of offsite power, the DGs are required to supply the necessary power to ESF systems so that the fuel, RCS, and containment design limits are not exceeded.

This Surveillance demonstrates the as designed operation of the standby power sources during a loss of offsite power actuation test signal in conjunction with an ECCS initiation signal. This test verifies all actions encountered from the loss of offsite power in conjunction with an ECCS initiation signal, including shedding of the nonessential loads and energization of the 4.16 kV shutdown boards and respective loads from the DG. It further demonstrates the capability of the DG to automatically achieve the required voltage and frequency within the specified time.

The requirement to verify the connection and power supply of permanent and auto-connected loads is intended to satisfactorily show the relationship of these loads to the DG loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential for undesired operation. For instance, Emergency Core Cooling Systems (ECCS) injection valves are not desired to be stroked open, some systems are not capable of being operated at full flow, and RHR systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of the connection and loading of these loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

24

The Frequency of 18 months takes into consideration plant conditions required to perform the Surveillance and is intended to be consistent with an expected fuel cycle length of 18 months.

24

This SR is modified by a Note. The reason for the Note is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.1 (continued)

in a fully charged state, while supplying adequate power to the connected DC loads. The voltage requirements are based on the nominal design voltage of the battery and are consistent with the initial voltages assumed in the battery sizing calculations. The 7 day Frequency is consistent with manufacturer recommendations and IEEE-450 (Ref. 7).

SR 3.8.4.2 and SR 3.8.4.5

Battery charger capability requirements are based on the design capacity of the chargers (Ref. 4). According to Regulatory Guide 1.32 (Ref. 8), the battery charger supply is required to be based on the largest combined demands of the various steady state loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state, irrespective of the status of the unit during these demand occurrences. The minimum required amperes and verification of the charger's ability to recharge the battery ensures that these requirements can be satisfied.

SR 3.8.4.2 verifies that the chargers are capable of charging the batteries after their designed duty cycle testing and ensures that the chargers will perform their design function. This SR is modified by a Note that allows performance of SR 3.8.4.5 in lieu of this Surveillance requirement. SR 3.8.4.5 verifies that the chargers are capable of charging the batteries after each discharge test and ensures that the chargers are capable of performing at maximum output. SR 3.8.4.2 is performed at the same frequency as the 18 month service test (SR 3.8.4.3), while SR 3.8.4.5 is performed following the 60 month battery discharge test (SR 3.8.4.4).

24

SR 3.8.4.5 is modified by a Note. The Note is added to this SR to acknowledge that credit may be taken for unplanned events that satisfy the Surveillance.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.4.3

A battery service test is a special test of the battery's capability, as found, to satisfy the design requirements (battery duty cycle) of the DC electrical power system. The discharge rate and test length corresponds to the design duty cycle requirements as specified in Reference 4.

5/26/98

24

The Frequency of 18 months is consistent with the recommendations of Regulatory Guide 1.32 (Ref. 8) and Regulatory Guide 1.129 (Ref. 9), which state, in part, that the battery service test should be performed with intervals between tests not to exceed 18 months.

plant conditions required to perform the Surveillance, plus other supporting Surveillance Requirements.

This SR is modified by a Note that allows the performance of a modified performance discharge test in lieu of a service test once per 60 months. The modified performance discharge test is a simulated duty cycle consisting of just two rates; the one minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance test, both of which envelope the duty cycle of the service test. Since the ampere-hours removed by a rated one minute discharge represents a very small portion of the battery capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test. The battery terminal voltage for the modified performance discharge test should remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test.

A modified discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test should be identical to those specified for a service test.

(continued)

BASES

REFERENCES (continued)

3. IEEE Standard 308.

4. FSAR, Sections 8.5 and 8.6.

5. FSAR, Chapters 6 and 14.

6. Regulatory Guide 1.93.

7. IEEE Standard 450-1995.

8. Regulatory Guide 1.32, February 1977.

[Not Used]

9. ~~Regulatory Guide 1.129, December 1974.~~

10. IEEE Standard 485, 1983.

11. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

ENCLOSURE 3

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN)
UNITS 1, 2, AND 3

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE TS-390
LIST OF COMMITMENTS

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1. TVA will issue Supplement of TS-390 detailing changes to instrument calibration Surveillance Frequencies and TS Allowable Values to accommodate a 24-month refueling cycle. TVA expects to submit the TS change detailing these changes in August 1998.

2. TVA will submit an affected page list and typed copies of appropriate TS pages for Units 1, 2, and 3 revised to show proposed changes to support a 24-month fuel cycle. TVA will furnish these pages prior to NRC approval.