

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

<u>FUNCTIONAL UNIT</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUES</u>
6. MOTOR DRIVEN AUXILIARY FEEDWATER PUMPS		
a. Steam Generator Water Level--Low-Low	Greater than or equal to 21% of narrow range instrument span each steam generator	Greater than or equal to 19.2% of narrow range instrument span each steam generator
b. 4 kV Bus Loss of Voltage	3280 volts with a 2 second delay	3280 \pm 120 volts with a 2 +/- 0.2 second delay
c. Safety Injection	Not Applicable	Not Applicable
d. Loss of Main Feedwater Pumps	Not Applicable	Not Applicable
7. TURBINE DRIVEN AUXILIARY FEEDWATER PUMPS		
a. Steam Generator Water Level--Low-Low	Greater than or equal to 21% of narrow range instrument span each steam generator	Greater than or equal to 19.2% of narrow range instrument span each steam generator
b. Reactor Coolant Pump Bus Undervoltage	Greater than or equal to 2750 Volts--each bus	Greater than or equal to 2725 Volts--each bus
8. LOSS OF POWER		
a. 4 kV Bus Loss of Voltage	3280 volts with a 2 second delay	3280 \pm 120 volts with a 2 +/- 0.2 second delay
b. 4 kV Bus Degraded Voltage	3638 volts with a 2.0 minute time delay	3638 \pm 60 volts with a 2.0 minute +/- 6 second time delay



EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- d. At least once per 18 months by:
1. Verifying automatic isolation and interlock action of the RHR system from the Reactor Coolant System when the Reactor Coolant System pressure is above 600 psig.
 2. A visual inspection of the containment sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or corrosion.
- e. At least once per 18 months, during shutdown, by:
1. Verifying that each automatic valve in the flow path actuates to its correct position on a Safety Injection test signal.
 2. Verifying that each of the following pumps start automatically upon receipt of a safety injection test signal:
 - a) Centrifugal charging pump
 - b) Safety injection pump
 - c) Residual heat removal pump
- f. By verifying that each of the following pumps develops the indicated discharge pressure on recirculation flow when tested pursuant to Specification 4.0.5:
- | | |
|-------------------------------|------------------------------------|
| 1. Centrifugal charging pump | Greater than or equal to 2405 psig |
| 2. Safety Injection pump | Greater than or equal to 1409 psig |
| 3. Residual heat removal pump | Greater than or equal to 190 psig |
- g. By verifying the correct position of each mechanical stop for the following Emergency Core Cooling System throttle valves:
1. Within 4 hours following completion of each valve stroking operation or maintenance on the valve when the ECCS sub-systems are required to be OPERABLE.

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURED ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODE IN WHICH SURVEILLANCE REQUIRED</u>
4. STEAM LINE ISOLATION				
a. Manual	N.A.	N.A.	M(1)	1,2,3
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	1,2,3
c. Containment Pressure--High-High	S	R	M(3)	1,2,3
d. Steam Flow in Two Steam Lines--High Coincident with Tavg--Low-Low Pressure--Low	S	R	M	1,2,3
5. TURBINE TRIP & FEEDWATER ISOLATION				
a. Steam Generator Water Level--High-High	S	R	M	1,2,3
6. MOTOR DRIVEN AUXILIARY FEEDWATER PUMPS				
a. Steam Generator Water Level--Low-Low	S	R	M	1,2,3
b. 4 kv Bus Loss of Voltage	S	R	M	1,2,3
c. Safety Injection	N.A.	N.A.	M(2)	1,2,3
d. Loss of Main Feed Pumps	N.A.	N.A.	R	1,2

CONTAINMENT SYSTEMS
SURVEILLANCE REQUIREMENTS (Continued)

shall be constituted of one basket each from Radial Rows 1, 2, 4, 6, 8 and 9 (or from the same row of an adjacent bay if a basket from a designated row cannot be obtained for weighing) within each bay. If any basket is found to contain less than 1220 pounds of ice, a representative sample of 20 additional baskets from the same bay shall be weighed. The minimum average weight of ice from the 20 additional baskets and the discrepant basket shall not be less than 1220 pounds/basket at a 95% level of confidence.

The ice condenser shall also be subdivided into 3 groups of baskets, as follows: Group 1 - bays 1 through 8, Group 2 - bays 9 through 16, and Group 3 - bays 17 through 24. The minimum average ice weight of the sample baskets from Radial Rows 1, 2, 4, 6, 8 and 9 in each group shall not be less than 1220 pounds/basket at a 95% level of confidence.

The minimum total ice condenser ice weight at a 95% level of confidence shall be calculated using all ice basket weights determined during this weighing program and shall not be less than 2,371,450 pounds.

3. Verifying, by a visual inspection of at least two flow passages per ice condenser bay, that the accumulation of frost or ice on the top deck floor grating, on the intermediate deck and on flow passages between ice baskets and past lattice frames is restricted to a nominal thickness of 3/8 inches. If one flow passage per bay is found to have an accumulation of frost or ice greater than this thickness, a representative sample of 20 additional flow passages from the same bay shall be visually inspected. If these additional flow passages are found acceptable, the surveillance program may proceed considering the single deficiency as unique and acceptable. More than one restricted flow passage per bay is evidence of abnormal degradation of the ice condenser.
 - c. At least once per 18 months by verifying, by a visual inspection, each ice condenser bay, that the accumulation of frost or ice on the lower inlet plenum support structures and turning vanes is restricted to a nominal thickness of 3/8 inches. An accumulation of frost and ice greater than this thickness is evidence of abnormal degradation of the ice condenser.
 - d. At least once per 40 months by lifting and visually inspecting the accessible portions of at least two ice baskets from each 1/3 of the ice condenser and verifying that the ice baskets are free of detrimental structural wear, cracks, corrosion or other damage. The ice baskets shall be raised at least 12 feet for this inspection.

CONTAINMENT SYSTEMS

ICE CONDENSER DOORS

LIMITING CONDITION FOR OPERATION

3.6.5.3 The ice condenser inlet doors, intermediate deck doors, and top deck doors shall be closed and OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one or more ice condenser doors open or otherwise inoperable, POWER OPERATION may continue for up to 14 days provided the ice bed temperature is monitored at least once per 4 hours and the maximum ice bed temperature is maintained less than or equal to 27°F; otherwise, restore the doors to their closed positions or OPERABLE status (as applicable) within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.3.1 Inlet Doors - Ice condenser inlet doors shall be:

- a. Continuously monitored and determined closed by the inlet door position monitoring system, and
- b. Demonstrated OPERABLE during shutdown at least once per 18 months by:
 1. Verifying that the torque required to initially open each door is less than or equal to 675 inch pounds.
 2. Verifying that opening of each door is not impaired by ice, frost or debris.
 3. Testing each one of the doors and verifying that the torque required to open each door is less than 195 inch-pounds when the door is 40 degrees open. This torque is defined as the "door opening torque" and is equal to the nominal door torque plus a frictional torque component.

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3.1

- a. At least two independent component cooling water loops shall be OPERABLE.
- b. At least one component cooling water flowpath in support of Unit 2 shutdown functions shall be available.

APPLICABILITY: Specification 3.7.3.1.a. - MODES 1, 2, 3, 4.
Specification 3.7.3.1.b. - At all times when Unit 2 is in MODES 1, 2, 3, or 4.

ACTION:

When Specification 3.7.3.1.a is applicable:

With only one component cooling water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

When Specification 3.7.3.1.b is applicable:

With no flowpath to Unit 2 available, return at least one flow path to available status within 7 days, or provide equivalent shutdown capability in Unit 2 and return at least one flow path to available status within the next 60 days, or have Unit 2 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours. The requirements of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.3.1 At least two component cooling water loops shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. At least once per 18 months during shutdown, by verifying that each automatic valve servicing safety related equipment actuates to its correct position on a Safety Injection test signal.
- c. At least once per 31 days on a STAGGERED TEST BASIS, by verifying that each pump develops at least 93% of the discharge pressure for the applicable flow rate as determined from the manufacturer's Pump Performance Curve.
- d. At least once per 18 months during shutdown, by verifying that the cross-tie valves can cycle full travel. Following cycling, the valves will be verified to be in their closed positions.

PLANT SYSTEMS

3/4.7.4 ESSENTIAL SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.4.1

- a. At least two independent essential service water loops shall be OPERABLE.
- b. At least one essential service water flowpath associated with support of Unit 2 shutdown functions shall be available.

APPLICABILITY: Specification 3.7.4.1.a. - MODES 1, 2, 3, and 4.
Specification 3.7.4.1.b. - At all times when Unit 2 is in MODES 1, 2, 3 or 4.

ACTION:

When Specification 3.7.4.1.a is applicable:

With only one essential service water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

When Specification 3.7.4.1.b is applicable:

With no essential service water flow path available in support of Unit 2 shutdown functions, return at least one flow path available status within 7 days or provide equivalent shutdown capability in Unit 2 and return the equipment to available status within the next 60 days, or have Unit 2 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours.

The requirements of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.4.1 At least two essential service water loops shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. At least once per 18 months during shutdown, by verifying that each automatic valve servicing safety related equipment actuates to its correct position on a Safety Injection test signal.
- c. At least once per 31 days on a STAGGERED TEST BASIS, by verifying that each pump develops at least 93% of the discharge pressure for the applicable flow rate as determined from the manufacturer's Pump Performance Curve.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.7.9.2 Each of the above required water spray and/or sprinkler systems shall be demonstrated to be OPERABLE:

- a. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel as provided by Technical Specification 4.7.9.1.1.d.
- b. At least once per 18 months:
 1. By performing a system functional test which includes simulated automatic actuation of the system, and:
 - a) Verifying that the automatic valves in the flow path actuate to their correct positions on a test signal, and
 - b) Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel.
 2. By visual inspection of deluge and preaction system piping (this is not required for systems supervised by air) to verify their integrity.
 3. By visual inspection of each open head deluge nozzle to verify that there is no blockage.
- c. At least once per 3 years by performing an air flow test through the piping of each open head deluge system and verifying each open head deluge nozzle is unobstructed.

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3.1

- a. At least two independent component cooling water loops shall be OPERABLE.
- b. At least one component cooling water flow path in support of Unit 1 shutdown functions shall be available.

APPLICABILITY: Specification 3.7.3.1.a. - MODES 1, 2, 3, 4.
Specification 3.7.3.1.b. - At all times when Unit 1 is in MODES 1, 2, 3, or 4.

ACTION:

When Specification 3.7.3.1.a is applicable:

With only one component cooling water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

When Specification 3.7.3.1.b is applicable:

With no flowpath in Unit 1 available, return at least one flowpath to available status within 7 days, or provide equivalent shutdown capability in Unit 1 and return at least one flow path to available status within the next 60 days, or have Unit 1 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours. The requirements of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.3.1 At least two component cooling water loops shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. At least once per 18 months during shutdown, by verifying that each automatic valve servicing safety related equipment actuates to its correct position on a Safety Injection test signal.

4.7.3.2 At least once per 18 months during shutdown, verify that the unit cross-tie valves can cycle full travel. Following cycling, the valves will be verified to be in their closed positions.

REACTOR COOLANT SYSTEM

LIMITING CONDITION FOR OPERATION (Continued)

2. With two or more block valves inoperable,

Within 1 hour either (1) restore a total of at least two block valves to OPERABLE status, or (2) close the block valves and remove power from the block valves, or (3) close the associated PORVs and remove power from their associated solenoid valves; and apply the portions of ACTION a.2 or a.3 above for inoperable PORVs, relating to OPERATIONAL MODE, as appropriate.

- c. With PORVs and block valves not in the same line inoperable,*

within 1 hour either (1) restore the valves to OPERABLE status or (2) close and de-energize the other valve in each line. Apply the portions of ACTION a.2 or a.3 above, relating to OPERATIONAL MODE, as appropriate for two or three lines unavailable.

- d. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

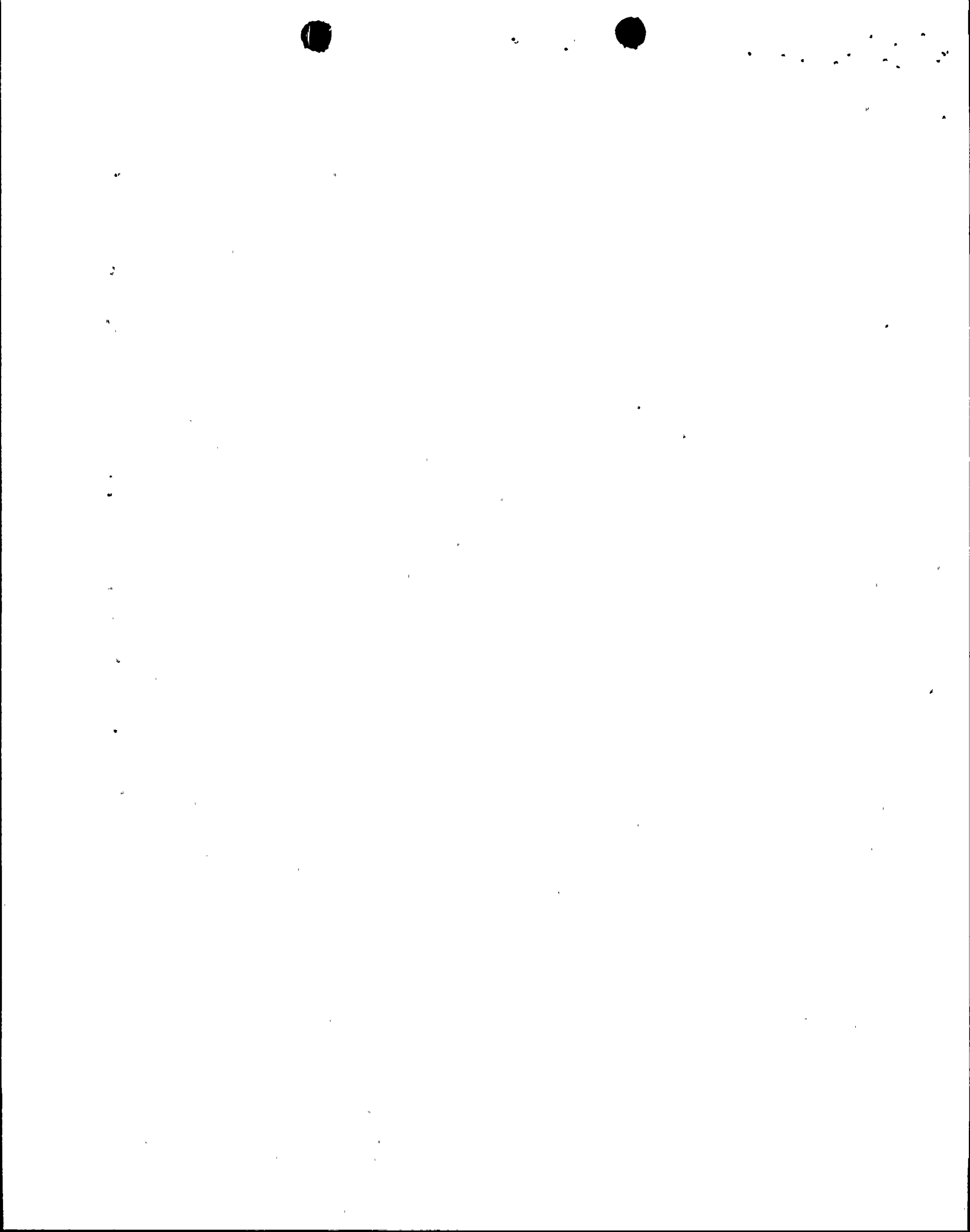
- 4.4.11.1 Each of the three PORVs shall be demonstrated OPERABLE:

- a. At least once per 31 days by performance of a CHANNEL FUNCTIONAL TEST, excluding valve operation, and
- b. At least once per 18 months by performance of a CHANNEL CALIBRATION.

4.4.11.2 Each of the three block valves shall be demonstrated OPERABLE at least once per 92 days by operating the valve through one complete cycle of full travel. The block valve(s) do not have to be tested when ACTION 3.4.11.a or 3.4.11.c is applied.

4.4.11.3 The emergency power supply for the PORVs and block valves shall be demonstrated OPERABLE at least once per 18 months by operating the valves through a complete cycle of full travel while the emergency buses are energized by the onsite diesel generators and onsite plant batteries. This testing can be performed in conjunction with the requirements of Specifications 4.8.1.1.2.c and 4.8.2.3.2.d.

*PORVs isolated to limit RCS leakage through their seats and the block valves shut to isolate this leakage are not considered inoperable.



3/4.7.4 ESSENTIAL SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.4.1

- a. At least two independent essential service water loops shall be OPERABLE.
- b. At least one essential service water flowpath associated with support of Unit 1 shutdown functions shall be available.

APPLICABILITY: Specification 3.7.4.1.a. - MODES 1, 2, 3, and 4.
Specification 3.7.4.1.b. - At all times when Unit 1 is in MODES 1, 2, 3 or 4.

ACTION:

When Specification 3.7.4.1.a is applicable:

With only one essential service water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

When specification 3.7.4.1.b is applicable:

With no essential service water flow path available in support of Unit 1 shutdown functions, return at least one flow path to available status within 7 days or provide equivalent shutdown capability in Unit 1 and return the equipment to service within the next 60 days, or have Unit 1 in HOT STANDBY within the next 12 hours and HOT SHUTDOWN within the following 24 hours. The requirements of Specifications 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

- 4.7.4.1 At least two essential service water loops shall be demonstrated OPERABLE:
- a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.
 - b. At least once per 18 months during shutdown, by verifying that each automatic valve servicing safety related equipment actuates to its correct position on a Safety Injection test signal.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.7.9.2 Each of the above required water spray and/or sprinkler systems shall be demonstrated to be OPERABLE:

- a. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel as provided by Technical Specification 4.7.9.1.1.d.
- b. At least once per 18 months:
 1. By performing a system functional test which includes simulated automatic actuation of the system, and:
 - a) Verifying that the automatic valves in the flow path actuate to their correct positions on a test signal, and
 - b) Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel,
 2. By visual inspection of deluge and preaction system piping (this is not required for systems supervised by air) to verify their integrity.
 3. By visual inspection of each open head deluge nozzle to verify that there is no blockage.
- c. At least once per 3 years by performing an air flow test through the piping of each open head deluge system and verifying each open head deluge nozzle is unobstructed.

