

Attachment 2 to AEP:NRC:1181

Proposed Technical Specifications
for Donald C. Cook Nuclear Plant Unit 2

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3/4.0 APPLICABILITY

SURVEILLANCE REQUIREMENTS

- 4.0.8 By specific reference to this section, those surveillances which must be performed on or before August 13, 1994, and are designated as 18-month or 36-month surveillances (or required as outage-related surveillances under the provisions of Specification 4.0.5) may be delayed until the end of the cycle 9-10 refueling outage. For these specific surveillances under this section, the specified time intervals required by Specification 4.0.2 will be determined with the new initiation date established by the surveillance date during the Unit 2 1994 refueling outage.

REACTIVITY CONTROL SYSTEMS

POSITION INDICATOR CHANNELS-SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.3.3 At least one rod position indicator channel (excluding demand position indication) shall be OPERABLE for each shutdown or control rod not fully inserted.

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

ACTION:

With less than the above required position indicator channel(s) OPERABLE, immediately open the reactor trip system breakers.

SURVEILLANCE REQUIREMENTS

4.1.3.3 Each of the above required rod position indicator channel(s) shall be determined to be OPERABLE by performance of a CHANNEL FUNCTIONAL TEST at least once per 18 months.†

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

#See Special Test Exception 3.10.5.

† The provisions of Technical Specification 4.0.8 are applicable.

POWER DISTRIBUTION LIMITS

DNB AND T_{avg} OPERATING PARAMETERS

LIMITING CONDITION FOR OPERATION

3.2.5 The following DNB related parameters shall be maintained within the following operational indicated limits:

a. DNB

- | | |
|--|---|
| 1. Reactor Coolant System T _{avg} | Less than or equal to 578.7°F* |
| 2. Pressurizer Pressure | Greater than or equal to 2200 psig** |
| 3. Reactor Coolant System
Total Flow Rate | Greater than or equal to 366,400 gpm*** |

b. T_{avg}

- | | |
|--|-----------------------------------|
| 1. Reactor Coolant System T _{avg} | Greater than or equal to 543.9°F* |
|--|-----------------------------------|

APPLICABILITY: MODE 1

ACTION:

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

SURVEILLANCE REQUIREMENTS

4.2.5.1 Each of the above parameters shall be verified to be within their limits at least once per 12 hours.

4.2.5.2 The indicators used to determine RCS total flow shall be subjected to a CHANNEL CALIBRATION at least once per 18 months.†

4.2.5.3 The RCS total flow rate shall be determined by a power balance around the steam generators at least once per 18 months.

4.2.5.4 The provisions of Specification 4.0.4 shall not apply to primary flow surveillances.

* Indicated average of at least three OPERABLE instrument loops.

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

*** Indicated value

† The provisions of Technical Specification 4.0.8 are applicable.

3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1.1 As a minimum, the reactor trip system instrumentation channels and interlocks of Table 3.3-1 shall be OPERABLE with RESPONSE TIMES as shown in Table 3.3-2.

APPLICABILITY: As shown in Table 3.3-1.

ACTION:

As shown in Table 3.3-1.

SURVEILLANCE REQUIREMENTS

4.3.1.1.1 Each reactor trip system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the MODES and at the frequencies shown in Table 4.3-1.†

4.3.1.1.2 The logic for the interlocks shall be demonstrated OPERABLE prior to each reactor startup unless performed during the preceding 92 days. The total interlock function shall be demonstrated OPERABLE at least once per 18 months during CHANNEL CALIBRATION testing of each channel affected by interlock operation.†

4.3.1.1.3 The REACTOR TRIP SYSTEM RESPONSE TIME of each reactor trip function shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least one logic train such that both logic trains are tested at least once per 36 months and one channel per function such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip function as shown in the "Total No. of Channels" column of Table 3.3-1.†

† The provisions of Technical Specification 4.0.8 are applicable.

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. Manual Reactor Trip				
A. Shunt Trip Function	N.A.	N.A.	S/U(1)(10)	1, 2, 3*, 4*, 5*
B. Undervoltage Trip Function	N.A.	N.A.	S/U(1)(10)	1, 2, 3*, 4*, 5*
2. Power Range, Neutron Flux	S	D(2,8),M(3,8) and Q(6,8)	M and S/U(1)	1, 2 and *
3. Power Range, Neutron Flux, High Positive Rate	N.A.	R(6)	M	1, 2
4. Power Range, Neutron Flux, High Negative Rate	N.A.	R(6)	M	1, 2
5. Intermediate Range, Neutron Flux	S	R(6,8)†	S/U(1)	1, 2 and *
6. Source Range, Neutron Flux	S	R(6,14)	M(14) and S/U(1)	2(7), 3(7), 4 and 5
7. Overtemperature AT	S	R(9)†	M	1, 2
8. Overpower AT	S	R(9)†	M	1, 2
9. Pressurizer Pressure--Low	S	R†	M	1, 2
10. Pressurizer Pressure--High	S	R†	M	1, 2
11. Pressurizer Water Level--High	S	R†	M	1, 2
12. Loss of Flow - Single Loop	S	R(8)†	M	1

† The provisions of Technical Specification 4.0.8 are applicable.

TABLE 4.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
13. Loss of Flow-Two Loops	S	R(8)†	N.A.	1
14. Steam Generator Water Level-- Low-Low	S	R	M	1, 2
15. Steam/Feedwater Flow Mismatch and Low Steam Generator Water Level	S	R	M	1, 2
16. Undervoltage-Reactor Coolant Pumps	N.A.	R	M	1
17. Underfrequency-Reactor Coolant Pumps	N.A.	R	M	1
18. Turbine Trip				
A. Low Fluid Oil Pressure	N.A.	N.A.	S/U(1)	1, 2
B. Turbine Stop Valve Closure	N.A.	N.A.	S/U(1)	1, 2
19. Safety Injection Input from EFS	N.A.	N.A.	M(4)	1, 2
20. Reactor Coolant Pump Breaker Position Trip	N.A.	N.A.	R	N.A.
21. Reactor Trip Breaker				
A. Shunt Trip Function	N.A.	N.A.	M(5)(11) and S/U(1)(11)	1,2,3*,4*,5*
B. Undervoltage Trip Function	N.A.	N.A.	M(5)(11) and S/U(1)(11)	1,2,3*,4*,5*
22. Automatic Trip Logic	N.A.	N.A.	M(5)	1,2,3*,4*,5*
23. Reactor Trip Bypass Breaker	N.A.	N.A.	M(12) and S/U(1)(13)	1,2,3*,4*,5*

† The provisions of Technical Specification 4.0.8 are applicable.

INSTRUMENTATION

3/4.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2.1 The Engineered Safety Feature Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4 and with RESPONSE TIMES as shown in Table 3.3-5.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

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

SURVEILLANCE REQUIREMENTS

4.3.2.1.1 Each ESFAS instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION, CHANNEL FUNCTIONAL TEST and TRIP ACTUATING DEVICE OPERATIONAL TEST operations for the MODES and at the frequencies shown in Table 4.3-2.†

4.3.2.1.2 The logic for the interlocks shall be demonstrated OPERABLE during the automatic actuation logic test. The total interlock function shall be demonstrated OPERABLE at least once per 18 months during CHANNEL CALIBRATION testing of each channel affected by interlock operation.†

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

† The provisions of Technical Specification 4.0.8 are applicable.

TABLE 4.3-2
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>TRIP ACTUATING DEVICE OPERATIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. SAFETY INJECTION; TURBINE TRIP, FEEDWATER ISOLATION, AND MOTOR DRIVEN AUXILIARY FEEDWATER PUMPS					
a. Manual Initiation	----- See Functional Unit 9 -----				
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3, 4
c. Containment Pressure-High	S	R	M(3)	N.A.	1, 2, 3
d. Pressurizer Pressure-Low	S	R†	M	N.A.	1, 2, 3
e. Differential Pressure Between Steam Lines--High	S	R	M	N.A.	1, 2, 3
f. Steam Line Pressure--Low	S	R	M	N.A.	1, 2, 3
2. CONTAINMENT SPRAY					
a. Manual Initiation	----- See Functional Unit 9 -----				
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3, 4
c. Containment Pressure-High-High	S	R	M(3)	N.A.	1, 2, 3
3. CONTAINMENT ISOLATION					
a. Phase "A" Isolation					
1) Manual	----- See Functional Unit 9 -----				
2) From Safety Injection Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3, 4
b. Phase "B" Isolation					
1) Manual	----- See Functional Unit 9 -----				
2) Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3, 4
3) Containment Pressure-High-High	S	R	M(3)	N.A.	1, 2, 3

† The provisions of Technical Specification 4.0.8 are applicable.

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>TRIP ACTUATING DEVICE OPERATIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
c. Purge and Exhaust Isolation					
1) Manual	----- See Functional Unit 9 -----				
2) Containment Radio-activity-High	S	R	M	N.A.	1, 2, 3, 4
4. STEAM LINE ISOLATION					
a. Manual	----- See Functional Unit 9 -----				
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3
c. Containment Pressure--High-High	S	R	M(3)	N.A.	1, 2, 3
d. Steam Flow in Two Steam Lines--High Coincident with T _{avg} --Low-Low	S	R	M	N.A.	1, 2, 3
e. Steam Line Pressure--Low	S	R	M	N.A.	1, 2, 3
5. TURBINE TRIP AND FEEDWATER ISOLATION					
a. Steam Generator Water Level--High-High	S	R	M	N.A.	1, 2, 3
6. MOTOR DRIVEN AUXILIARY FEEDWATER PUMPS					
a. Steam Generator Water Level--Low-Low	S	R	M	N.A.	1, 2, 3
b. 4 kV Bus Loss of Voltage	S	R	M	N.A.	1, 2, 3
c. Safety Injection	N.A.	N.A.	M(2)	N.A.	1, 2, 3
d. Loss of Main Feed Pumps	N.A.	N.A.	R†	N.A.	1, 2

† The provisions of Technical Specification 4.0.8 are applicable.

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>TRIP ACTUATING DEVICE OPERATIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
7. TURBINE DRIVEN AUXILIARY FEEDWATER PUMP					
a. Steam Generator Water Level--Low-low	S	R	M	N.A.	1,2,3
b. Reactor Coolant Pump Bus Undervoltage	N.A.	R	M	N.A.	1,2,3
8. LOSS OF POWER					
a. 4 kv Bus Loss of Voltage	S	R	M	N.A.	1,2,3,4
b. 4 kv Bus Degraded Voltage	S	R	M	N.A.	1,2,3,4
9. MANUAL					
a. Safety Injection (ECCS) Feedwater Isolation Reactor Trip (SI) Containment Isolation- Phase "A" Containment Purge and Exhaust Isolation Auxiliary Feedwater Pumps Essential Service Water System	N.A.	N.A.	N.A.	R†	1,2,3,4
b. Containment Spray Containment Isolation- Phase "B" Containment Purge and Exhaust Isolation Containment Air Recirculation Fan	N.A.	N.A.	N.A.	R†	1,2,3,4
c. Containment Isolation- Phase "A" Containment Purge and Exhaust Isolation	N.A.	N.A.	N.A.	R†	1,2,3,4
d. Steam Line Isolation	N.A.	N.A.	M(1†)	R†	1,2,3

† The provisions of Technical Specification 4.0.8 are applicable.



TABLE 4.3-6A
APPENDIX R REMOTE SHUTDOWN MONITORING INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>LOCATION</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Steam Generators 1 and 4 Level	LSI Cabinet 1 and LSI Cabinet 4	M	R
2. Steam Generators 2 and 3 Level	LSI Cabinet 2 and LSI Cabinet 4	M	R
3. Steam Generators 1 and 4 Pressure	LSI Cabinet 4 and LSI Cabinet 5	M	R
4. Steam Generators 2 and 3 Pressure	LSI Cabinet 4 and LSI Cabinet 6	M	R
5. Reactor Coolant Loop 4 Temperature (Cold)	LSI Cabinet 4 and LSI Cabinet 5	M	R†
6. Reactor Coolant Loop 4 Temperature (Hot)	LSI Cabinet 4 and LSI Cabinet 5	M	R†
7. Reactor Coolant Loop 2 Temperature (Cold)	LSI Cabinet 4 and LSI Cabinet 6	M	R†
8. Reactor Coolant Loop 2 Temperature (Hot)	LSI Cabinet 4 and LSI Cabinet 6	M	R†
9. Pressurizer Level	LSI Cabinet 3	M	R
10. Reactor Coolant System Pressure	LSI Cabinet 3	M	R
11. Charging Cross-Flow Between Units	Corridor Elev. 587'	n/a	R*
12. Source Range Neutron Detector (N-23)	LSI Cabinet 4	n/a	R

* Charging Cross-Flow between Units is an instrument common to both Unit 1 and 2. This surveillance will only be conducted on an interval consistent with Unit 1 refueling.

† The provisions of Technical Specification 4.0.8 are applicable.

TABLE 4.3-10
POST-ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Containment Pressure	M	R
2. Reactor Coolant Outlet Temperature - T _{HOT} (Wide Range)	M	R†
3. Reactor Coolant Inlet Temperature - T _{COLD} (Wide Range)	M	R†
4. Reactor Coolant Pressure - Wide Range	M	R
5. Pressurizer Water Level	M	R
6. Steam Line Pressure	M	R
7. Steam Generator Water Level - Narrow Range	M	R
8. RWST Water Level	M	R
9. Boric Acid Tank Solution Level	M	R
10. Auxiliary Feedwater Flow Rate	M	R
11. Reactor Coolant System Subcooling Margin Monitor	M	R†
12. PORV Position Indicator - Limit Switches	M	R
13. PORV Block Valve Position Indicator - Limit Switches	M	R
14. Safety Valve Position Indicator - Acoustic Monitor	M	R
15. Incore Thermocouples (Core Exit Thermocouples)(4)	M	R(1)
16. Reactor Coolant Inventory Tracking System (Reactor Vessel Level Indication)	M(2)	R(3)†
17. Containment Sump Level*	M	R
18. Containment Water Level*	M	R†

- (1) Partial range channel calibration for sensor to be performed below P-12 in MODE 3.
 - (2) With one train of Reactor Vessel Level Indication inoperable, Subcooling Margin Indication and Core Exit Thermocouples may be used to perform a CHANNEL CHECK to verify the remaining Reactor Vessel Indication train OPERABLE.
 - (3) Completion of channel calibration for sensors to be performed below P-12 in MODE 3.
 - (4) The core exit thermocouples will not be installed until the 1988 refueling outage; therefore, surveillances will not be required until that time. See license amendment dated April 10, 1987.
- * The requirements for these instruments will become effective after the level transmitters are modified or replaced and become operational. The schedule for modification or replacement of the transmitters is described in the Bases.
- † The provisions of Technical Specification 4.0.8 are applicable.

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.e 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.

† The provisions of Technical Specification 4.0.8 are applicable.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b. At least once per 31 days and within 6 hours after each solution volume increase greater than or equal to 1% of tank volume by verifying the boron concentration of the accumulator solution.
- c. At least once per 31 days when the RCS pressure is above 2000 psig by verifying that power to the isolation valve operator is disconnected by removal of the breaker from the circuit.
- d. At least once per 18 months by verifying that each accumulator isolation valve opens automatically upon receipt of a safety injection test signal.†

† The provisions of Technical Specification 4.0.8 are applicable.

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.

† The provisions of Technical Specification 4.0.8 are applicable.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS

4.5.3.1 The ECCS subsystem shall be demonstrated OPERABLE per the applicable Surveillance Requirements of 4.5.2.†

4.5.3.2 All charging pumps and safety injection pumps, except the above required OPERABLE charging pump, shall be demonstrated inoperable, by verifying that the motor circuit breakers have been removed from their electrical power supply circuits, at least once per 12 hours whenever the temperature of one or more of the RCS cold legs is less than or equal to 152°F as determined at least once per hour when any RCS cold leg temperature is between 152°F and 200°F.

† The provisions of Technical Specification 4.0.8 are applicable.

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Two independent containment spray systems shall be OPERABLE with each spray system capable of taking suction from the RWST and transferring suction to the containment sump.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

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

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each containment spray system shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked sealed, or otherwise secured in position, is in its correct position.
- b. By verifying, that on recirculation flow, each pump develops a discharge pressure of greater than or equal to 255 psig at a flow of greater than or equal to 700 gpm, when tested pursuant to Specification 4.0.5.
- c. At least once per 18 months during shutdown, by:
 1. Verifying that each automatic valve in the flow path actuates to its correct position on a Containment Pressure--High-High test signal.
 2. Verifying that each spray pump starts automatically on a Containment Pressure--High-High test signal.
- d. At least once per 5 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

† The provisions of Technical Specification 4.0.8 are applicable.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c. At least once per 18 months during shutdown, by verifying that each automatic valve in the flow path actuates to its correct position on a Containment Pressure--High-High test signal.†
- d. At least once per 5 years by verifying a water flow rate of at least 20 gpm (greater than or equal to 20 gpm) but not to exceed 50 gpm (less than or equal to 50 gpm) from the spray additive tank test line to each containment spray system with the spray pump operating on recirculation with a pump discharge pressure greater than or equal to 255 psig.

† The provisions of Technical Specification 4.0.8 are applicable.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.1.2 Each isolation valve specified in Table 3.6-1 shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:†

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

4.6.3.1.3 The isolation time of each power operated or automatic valve of Table 3.6-1 shall be determined to be within its limit when tested pursuant to Specification 4.0.5

† The provisions of Technical Specification 4.0.8 are applicable.

CONTAINMENT SYSTEMS

DIVIDER BARRIER SEAL

LIMITING CONDITION FOR OPERATION

3.6.5.9 The divider barrier seal shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the divider barrier seal inoperable, restore the seal to OPERABLE status prior to increasing the Reactor Coolant System temperature above 200°F.

SURVEILLANCE REQUIREMENTS

4.6.5.9 The divider barrier seal shall be determined OPERABLE at least once per 18 months during shutdown by:†

- a. Removing two divider barrier seal test coupons and verifying that the physical properties of the test coupons are within the acceptable range of values shown in Table 3.6-2.
- b. Visually inspecting at least 95 percent of the seal's entire length and:
 1. Verifying that the seal and seal mounting bolts are properly installed, and
 2. Verifying that the seal material shows no visual evidence of deterioration due to holes, ruptures, chemical attack, abrasion, radiation damage, or changes in physical appearances.

† The provisions of Technical Specification 4.0.8 are applicable.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

- 4.7.1.2 Each auxiliary feedwater pump shall be demonstrated OPERABLE when tested pursuant to Specification 4.0.5 by:
- a. Verifying that each motor driven pump develops an equivalent discharge pressure of greater than or equal to 1240 psig at 60°F in recirculation flow.
 - b. Verifying that the steam turbine driven pump develops an equivalent discharge pressure of greater than or equal to 1180 psig at 60°F and at a flow of greater than or equal to 700 gpm when the secondary steam supply pressure is greater than 310 psig. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.
 - c. Verifying that each non-automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in its correct position.
 - d. Verifying that each automatic valve in the flow path is in the fully open position whenever the auxiliary feedwater system is placed in automatic control or when above 10% RATED THERMAL POWER. This requirement is not applicable for those portions of the auxiliary feedwater system being used intermittently to maintain steam generator level.
 - e. Verifying at least once per 18 months during shutdown that each automatic valve in the flow path actuates to its correct position upon receipt of the appropriate engineered safety features actuation test signal required by Specification 3/4.3.2.†
 - f. Verifying at least once per 18 months during shutdown that each auxiliary feedwater pump starts as designed automatically upon receipt of the appropriate engineered safety features actuation test signal required by Specification 3/4.3.2.†
 - g. Verifying at least once per 18 months during shutdown that the unit cross-tie valves can cycle full travel. Following cycling, the valves will be verified to be in their closed positions.

† The provisions of Technical Specification 4.0.8 are applicable.

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.

† The provisions of Technical Specification 4.0.8 are applicable.

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 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.†

† The provisions of Technical Specification 4.0.8 are applicable.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

e. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the ventilation system at a flow rate of 6000 cfm plus or minus 10%.
2. Verifying that on a Safety Injection Signal from either Unit 1 or Unit 2, or on a containment phase A isolation signal, the system automatically diverts its inlet flow through the HEPA filters and charcoal adsorber bank and that either fan can then be manually started in the recirculation mode.†
3. Verifying that the system maintains the control room at a positive pressure of greater than or equal to 1/16 inch W. G. relative to the outside atmosphere at a system flow rate of 6000 cfm plus or minus 10%.

f. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 6000 cfm plus or minus 10%.

g. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 6000 cfm plus or minus 10%.

† The provisions of Technical Specification 4.0.8 are applicable.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%.

- d. At least once per 18 months by:
 - 1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%.
 - 2. Deleted.
 - 3. Verifying that the standby fan starts automatically on a Containment Pressure--High-High Signal and directs its exhaust flow through the HEPA filters and charcoal adsorber banks on a Containment Pressure--High-High Signal.†
- e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%.
- f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%.

† The provisions of Technical Specification 4.0.8 are applicable.

PLANT SYSTEMS

3/4.7.7 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.7.1 All snubbers listed in Table 3.7-9 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4. (MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES).

ACTION:

With one or more snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.7.1.c on the supported component or declare the supported system inoperable and follow the appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

4.7.7.1 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5.

a. Visual Inspection†

The first inservice visual inspection of snubbers shall be performed after four months but with 10 months of commencing POWER OPERATION and shall include all snubbers listed in Table 3.7-9. If less than two (2) snubbers are found inoperable during the first inservice visual inspection, the second inservice visual inspection shall be performed 12 months plus or minus 25% from the date of the first inspection. Otherwise, subsequent visual inspections shall be performed in accordance with the following schedule:

<u>No. Inoperable Snubbers per Inspection Period</u>	<u>Subsequent Visual Inspection Period*#</u>
0	18 months plus or minus 25%
1	12 months plus or minus 25%
2	6 months plus or minus 25%
3,4	124 days plus or minus 25%
5,6,7	62 days plus or minus 25%
8 or more	31 days plus or minus 25%

The snubbers may be categorized into two groups: Those accessible and those inaccessible during reactor operation. Each group may be inspected independently in accordance with the above schedule.

* The inspection interval shall not be lengthened more than one step at a time.

The provisions of Specification 4.0.2 are not applicable.

† The provisions of Technical Specification 4.0.8 are applicable.



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.e.
- 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.

*The fire protection water flow surveillance testing may be suspended until the completion of the fire protection water storage tank and fire pump installations (May 31, 1993). The surveillance testing suspended as a result of this amendment will be initiated at its normal frequency within four months of the new fire protection water storage tanks and fire pumps being declared OPERABLE, with the exception of unit outage required testing which would be completed before the end of the next scheduled outage.

† The provisions of Technical Specification 4.0.8 are applicable.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- a) A kinematic viscosity of greater than or equal to 1.9 centistokes but less than or equal to 4.1 centistokes at 40°C (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6 but less than or equal to 40.1), if gravity was not determined by comparison with supplier's certification.
- b) A flash point equal to or greater than 125°F.
- 2) By verifying, in accordance with the test specified in ASTM D1298-80 and prior to adding the new fuel to the storage tanks, that the sample has either an API gravity of greater than or equal to 30 degrees but less than or equal to 40 degrees at 60°F or an absolute specific gravity at 60/60°F of greater than or equal to 0.82 but less than or equal to 0.88, or an API gravity of within 0.3 degrees at 60°F when compared to the supplier's certificate or a specific gravity of within 0.0016 at 60/60°F when compared to the supplier's certificate.
- 3) By verifying, in accordance with the test specified in ASTM D4176-82 and prior to adding new fuel to the storage tanks, that the sample has a clear and bright appearance with proper color.
- 4) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are within the appropriate limits when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D2622-82.
- d. At least once per 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-83, and verifying that total particulate contamination is less than 10 mg/liter when tested in accordance with ASTM D2276-83, Method A*.
- e. At least once per 18 months, during shutdown, by:†
 - 1. Subjecting the diesel engine to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service,

*The actions to be taken should any of the properties be found outside of the specified limits are defined in the Bases.

† The provisions of Technical Specification 4.0.8 are applicable.

ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

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

- a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and
- b. One diesel generator with:
 1. A day fuel tank containing a minimum of 70 gallons of fuel,
 2. A fuel storage system containing a minimum indicated volume of 46,000 gallons of fuel, and
 3. A fuel transfer pump.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes* until the minimum required A.C. electrical power sources are restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5.†

* For purposes of this specification, addition of water from the RWST does not constitute a positive reactivity addition provided the boron concentration in the RWST is greater than the minimum required by Specification 3.1.2.7.b.2.

† The provisions of Technical Specification 4.0.8 are applicable.

Attachment 3 to AEP:NRC:1181

Existing Technical Specifications
for Donald C. Cook Nuclear Plant Unit 2
Marked to Reflect the Proposed Changes

3/4.0 APPLICABILITY

SURVEILLANCE REQUIREMENTS

- 4.0.8 By specific reference to this section, those surveillances which must be performed on or before August 13, 1994, and are designated as 18-month or 36-month surveillances (or required as outage-related surveillances under the provisions of Specification 4.0.5) may be delayed until the end of the cycle 9-10 refueling outage. For these specific surveillances under this section, the specified time intervals required by Specification 4.0.2 will be determined with the new initiation date established by the surveillance date during the Unit 2 1994 refueling outage.

*Add this as a
new page to the
existing T/S.*

REACTIVITY CONTROL SYSTEMS

POSITION INDICATOR CHANNELS-SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.3.3: At least one rod position indicator channel (excluding demand position indication) shall be OPERABLE for each shutdown or control rod not fully inserted.

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

ACTION:

With less than the above required position indicator channel(s) OPERABLE, immediately open the reactor trip system breakers.

SURVEILLANCE REQUIREMENTS

4.1.3.3: Each of the above required rod position indicator channel(s) shall be determined to be OPERABLE by performance of a CHANNEL FUNCTIONAL TEST at least once per 18 months. †

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

#See Special Test Exception 3.10.5.

† The provisions of Technical Specification 4.0.8 are applicable.



POWER DISTRIBUTION LIMITS

DNB AND T_{avg} OPERATING PARAMETERS

LIMITING CONDITION FOR OPERATION

3.2.5 The following DNB related parameters shall be maintained within the following operational indicated limits:

a. DNB

- | | |
|--|---|
| 1. Reactor Coolant System T _{avg} | Less than or equal to 578.7°F* |
| 2. Pressurizer Pressure | Greater than or equal to 2200 psig** |
| 3. Reactor Coolant System
Total Flow Rate | Greater than or equal to 366,400 gpm*** |

b. T_{avg}

- | | |
|--|-----------------------------------|
| 1. Reactor Coolant System T _{avg} | Greater than or equal to 543.9°F* |
|--|-----------------------------------|

APPLICABILITY: MODE 1

ACTION:

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

SURVEILLANCE REQUIREMENTS

4.2.5.1 Each of the above parameters shall be verified to be within their limits at least once per 12 hours.

4.2.5.2 The indicators used to determine RCS total flow shall be subjected to a CHANNEL CALIBRATION at least once per 18 months.†

4.2.5.3 The RCS total flow rate shall be determined by a power balance around the steam generators at least once per 18 months.

4.2.5.4 The provisions of Specification 4.0.4 shall not apply to primary flow surveillances.

* Indicated average of at least three OPERABLE instrument loops.

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

*** Indicated value

† The provisions of Technical Specification 4.0.8 are applicable.



3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1.1 As a minimum, the reactor trip system instrumentation channels and interlocks of Table 3.3-1 shall be OPERABLE with RESPONSE TIMES as shown in Table 3.3-2.

APPLICABILITY: As shown in Table 3.3-1.

ACTION:

As shown in Table 3.3-1.

SURVEILLANCE REQUIREMENTS

4.3.1.1.1 Each reactor trip system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the MODES and at the frequencies shown in Table 4.3-1.†

4.3.1.1.2 The logic for the interlocks shall be demonstrated OPERABLE prior to each reactor startup unless performed during the preceding 92 days. The total interlock function shall be demonstrated OPERABLE at least once per 18 months during CHANNEL CALIBRATION testing of each channel affected by interlock operation.†

4.3.1.1.3 The REACTOR TRIP SYSTEM RESPONSE TIME of each reactor trip function shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least one logic train such that both logic trains are tested at least once per 36 months and one channel per function such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific reactor trip function as shown in the "Total No. of Channels" column of Table 3.3-1.†

† The provisions of Technical Specification 4.0.8 are applicable.

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. Manual Reactor Trip				
A. Shunt Trip Function	N.A.	N.A.	S/U(1)(10)	1, 2, 3*, 4*, 5*
B. Undervoltage Trip Function	N.A.	N.A.	S/U(1)(10)	1, 2, 3*, 4*, 5*
2. Power Range, Neutron Flux	S	D(2,8),M(3,8) and Q(6,8)	M and S/U(1)	1, 2 and *
3. Power Range, Neutron Flux, High Positive Rate	N.A.	R(6)	M	1, 2
4. Power Range, Neutron Flux, High Negative Rate	N.A.	R(6)	M	1, 2
5. Intermediate Range, Neutron Flux	S	R(6,8)†	S/U(1)	1, 2 and *
6. Source Range, Neutron Flux	S	R(6,14)	M(14) and S/U(1)	2(7), 3(7), 4 and 5
7. Overtemperature ΔT	S	R(9)†	M	1, 2
8. Overpower ΔT	S	R(9)†	M	1, 2
9. Pressurizer Pressure--Low	S	RT	M	1, 2
10. Pressurizer Pressure--High	S	R†	M	1, 2
11. Pressurizer Water Level--High	S	R†	M	1, 2
12. Loss of Flow - Single Loop	S	R(8)†	M	1

† The provisions of Technical Specification 4.0.8 are applicable

TABLE 4.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
13. Loss of Flow-Two Loops	S	R(8)†	N.A.	1
14. Steam Generator Water Level-- Low-Low	S	R	M	1, 2
15. Steam/Feedwater Flow Mismatch and S Low Steam Generator Water Level	S	R	M	1, 2
16. Undervoltage-Reactor Coolant Pumps	N.A.	R	M	1
17. Underfrequency-Reactor Coolant Pumps	N.A.	R	M	1
18. Turbine Trip				
A. Low Fluid Oil Pressure	N.A.	N.A.	S/U(1)	1, 2
B. Turbine Stop Valve Closure	N.A.	N.A.	S/U(1)	1, 2
19. Safety Injection Input from ESF	N.A.	N.A.	M(4)	1, 2
20. Reactor Coolant Pump Breaker Position Trip	N.A.	N.A.	R	N.A.
21. Reactor Trip Breaker				
A. Shunt Trip Function	N.A.	N.A.	M(5)(11) and S/U(1)(11)	1, 2, 3*, 4*, 5*
B. Undervoltage Trip Function	N.A.	N.A.	M(5)(11) and S/U(1)(11)	1, 2, 3*, 4*, 5*
22. Automatic Trip Logic	N.A.	N.A.	M(5)	1, 2, 3*, 4*, 5*
23. Reactor Trip Bypass Breaker	N.A.	N.A.	M(12) and S/U(1)(13)	1, 2, 3*, 4*, 5*

† The provisions of Technical Specification 4.0.8 are applicable.

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INSTRUMENTATION

3/4.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2.1 The Engineered Safety Feature Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4 and with RESPONSE TIMES as shown in Table 3.3-5:

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

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

SURVEILLANCE REQUIREMENTS

4.3.2.1.1 Each ESFAS instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION, CHANNEL FUNCTIONAL TEST and TRIP ACTUATING DEVICE OPERATIONAL TEST operations for the MODES and at the frequencies shown in Table 4.3-2.†

4.3.2.1.2 The logic for the interlocks shall be demonstrated OPERABLE during the automatic actuation logic test. The total interlock function shall be demonstrated OPERABLE at least once per 18 months during CHANNEL CALIBRATION testing of each channel affected by interlock operation.†

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

† The provisions of Technical Specification 4.0.8 are applicable.

TABLE 4.3-2
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>TRIP ACTUATING DEVICE OPERATIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. SAFETY INJECTION, TURBINE TRIP, FEEDWATER ISOLATION, AND MOTOR DRIVEN AUXILIARY. FEEDWATER PUMPS					
a. Manual Initiation.	----- See Functional Unit 9 -----				
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3, 4
c. Containment Press- ure-High	S	R	M(3)	N.A.	1, 2, 3
d. Pressurizer Press- ure-Low	S	R†	M	N.A.	1, 2, 3
e. Differential Press- ure Between Steam Lines--High	S	R	M	N.A.	1, 2, 3
f. Steam Line Pressure-- Low	S	R	M	N.A.	1, 2, 3
2. CONTAINMENT SPRAY					
a. Manual Initiation	----- See Functional Unit 9 -----				
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3, 4
c. Containment Press- ure-High-High	S	R	M(3)	N.A.	1, 2, 3
3. CONTAINMENT ISOLATION					
a. Phase "A" Isolation					
1) Manual	----- See Functional Unit 9 -----				
2) From Safety Injection Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3, 4
b. Phase "B" Isolation					
1) Manual	----- See Functional Unit 9 -----				
2) Automatic Actua- tion Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3, 4
3) Containment Press- ure-High-High	S	R	M(3)	N.A.	1, 2, 3

The provisions of Technical Specification 4.0.8 are applicable.
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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>TRIP ACTUATING DEVICE OPERATIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
c. Purge and Exhaust Isolation					
1) Manual	----- See Functional Unit 9 -----				
2) Containment Radio-activity-High	S	R	M	N.A.	1, 2, 3, 4
4. STEAM LINE ISOLATION					
a. Manual	----- See Functional Unit 9 -----				
b. Automatic Actuation Logic	N.A.	N.A.	M(2)	N.A.	1, 2, 3
c. Containment Pressure--High-High	S	R	M(3)	N.A.	1, 2, 3
d. Steam Flow in Two Steam Lines--High Coincident with T _{avg} --Low-Low	S	R	M	N.A.	1, 2, 3
e. Steam Line Pressure--Low	S	R	M	N.A.	1, 2, 3
5. TURBINE TRIP AND FEEDWATER ISOLATION					
a. Steam Generator Water Level--High-High	S	R	M	N.A.	1, 2, 3
6. MOTOR DRIVEN AUXILIARY FEEDWATER PUMPS					
a. Steam Generator Water Level--Low-Low	S	R	M	N.A.	1, 2, 3
b. 4 kV Bus Loss of Voltage	S	R	M	N.A.	1, 2, 3
c. Safety Injection	N.A.	N.A.	M(2)	N.A.	1, 2, 3
d. Loss of Main Feed Pumps	N.A.	N.A.	R†	N.A.	1, 2

† The provisions of Technical Specification 4.0.8 are applicable.

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>TRIP ACTUATING DEVICE OPERATIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
7. TURBINE DRIVEN AUXILIARY FEEDWATER PUMP					
a. Steam Generator Water Level--Low-low	S	R	M	N.A.	1, 2, 3
b. Reactor Coolant Pump Bus Undervoltage	N.A.	R	M	N.A.	1, 2, 3
8. LOSS OF POWER					
a. 4 kv Bus Loss of Voltage	S	R	M	N.A.	1, 2, 3, 4
b. 4 kv Bus Degraded Voltage	S	R	M	N.A.	1, 2, 3, 4
9. Manual					
a. Safety Injection (ECCS) Feedwater Isolation Reactor Trip (SI) Containment Isolation- Phase "A" Containment Purge and Exhaust Isolation Auxiliary Feedwater Pumps Essential Service Water System	N.A.	N.A.	N.A.	R†	1, 2, 3, 4
b. Containment Spray Containment Isolation- Phase "B" Containment Purge and Exhaust Isolation Containment Air Recirculation Fan	N.A.	N.A.	N.A.	R†	1, 2, 3, 4
c. Containment Isolation- Phase "A" Containment Purge and Exhaust Isolation	N.A.	N.A.	N.A.	R†	1, 2, 3, 4
d. Steam Line Isolation	N.A.	N.A.	M(1/2)†	R†	1, 2, 3

The provisions of Technical Specification 4.0.18 are applicable.

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TABLE 4.3-6A
APPENDIX R REMOTE SHUTDOWN MONITORING INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>LOCATION</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Steam Generators 1 and 4 Level	LSI Cabinet 1 and LSI Cabinet 4	M	R
2. Steam Generators 2 and 3 Level	LSI Cabinet 2 and LSI Cabinet 4	M	R
3. Steam Generators 1 and 4 Pressure	LSI Cabinet 4 and LSI Cabinet 5	M	R
4. Steam Generators 2 and 3 Pressure	LSI Cabinet 4 and LSI Cabinet 6	M	R
5. Reactor Coolant Loop 4 Temperature (Cold)	LSI Cabinet 4 and LSI Cabinet 5	M	R† 1
6. Reactor Coolant Loop 4 Temperature (Hot)	LSI Cabinet 4 and LSI Cabinet 5	M	R† 1
7. Reactor Coolant Loop 2 Temperature (Cold)	LSI Cabinet 4 and LSI Cabinet 6	M	R† 1
8. Reactor Coolant Loop 2 Temperature (Hot)	LSI Cabinet 4 and LSI Cabinet 6	M	R† 1
9. Pressurizer Level	LSI Cabinet 3	M	R
10. Reactor Coolant System Pressure	LSI Cabinet 3	M	R
11. Charging Cross-Flow Between Units.	Corridor Elev. 587'	n/a	R*
12. Source Range Neutron Detector (N-23)	LSI Cabinet 4	n/a	R

* Charging Cross-Flow between Units is an instrument common to both Unit 1 and 2. This surveillance will only be conducted on an interval consistent with Unit 1 refueling.

† The provisions of Technical Specification 4.0.8 are applicable.

TABLE 4.3-10
POST-ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Containment Pressure	M	R
2. Reactor Coolant Outlet Temperature - T_{HOT} (Wide Range)	M	R†
3. Reactor Coolant Inlet Temperature - T_{COLD} (Wide Range)	M	R†
4. Reactor Coolant Pressure - Wide Range	M	R
5. Pressurizer Water Level	M	R
6. Steam Line Pressure	M	R
7. Steam Generator Water Level - Narrow Range	M	R
8. RWST Water Level	M	R
9. Boric Acid Tank Solution Level	M	R
10. Auxiliary Feedwater Flow Rate	M	R
11. Reactor Coolant System Subcooling Margin Monitor	M	R†
12. PORV Position Indicator - Limit Switches	M	R
13. PORV Block Valve Position Indicator - Limit Switches	M	R
14. Safety Valve Position Indicator - Acoustic Monitor	M	R
15. Incore Thermocouples (Core Exit Thermocouples)(4)	M	R(1)
16. Reactor Coolant Inventory Tracking System (Reactor Vessel Level Indication)	M(2)	R(3)†
17. Containment Sump Level*	M	R
18. Containment Water Level*	M	R†

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- (1) Partial range channel calibration for sensor to be performed below P-12 in MODE 3.
 - (2) With one train of Reactor Vessel Level Indication inoperable, Subcooling Margin Indication and Core Exit Thermocouples may be used to perform a CHANNEL CHECK to verify the remaining Reactor Vessel Indication train OPERABLE.
 - (3) Completion of channel calibration for sensors to be performed below P-12 in MODE 3.
 - (4) The core exit thermocouples will not be installed until the 1988 refueling outage; therefore, surveillances will not be required until that time. See license amendment dated April 10, 1987.

* The requirements for these instruments will become effective after the level transmitters are modified or replaced and become operational. The schedule for modification or replacement of the transmitters is described in the Bases.

† The provisions of Technical Specification 4.0.8x are applicable.



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.e 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.

† The provisions of Technical Specification 4.0.8 are applicable.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b. At least once per 31 days and within 6 hours after each solution volume increase greater than or equal to 1% of tank volume by verifying the boron concentration of the accumulator solution.
- c. At least once per 31 days when the RCS pressure is above 2000 psig by verifying that power to the isolation valve operator is disconnected by removal of the breaker from the circuit.
- d. At least once per 18 months by verifying that each accumulator isolation valve opens automatically upon receipt of a safety injection test signal.†

† The provisions of Technical Specification 4.018 are applicable.

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.

†. The provisions of Technical Specification 4.0.3 are applicable.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS

4.5.3.1 The ECCS subsystem shall be demonstrated OPERABLE per the applicable Surveillance Requirements of 4.5.2.†

4.5.3.2 All charging pumps and safety injection pumps, except the above required OPERABLE charging pump, shall be demonstrated inoperable, by verifying that the motor circuit breakers have been removed from their electrical power supply circuits, at least once per 12 hours whenever the temperature of one or more of the RCS cold legs is less than or equal to 152°F as determined at least once per hour when any RCS cold leg temperature is between 152°F and 200°F.

† The provisions of Technical Specification 4.0.8 are applicable.

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Two independent containment spray systems shall be OPERABLE with each spray system capable of taking suction from the RWST and transferring suction to the containment sump.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

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

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each containment spray system shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked sealed, or otherwise secured in position, is in its correct position.
- b. By verifying, that on recirculation flow, each pump develops a discharge pressure of greater than or equal to 255 psig at a flow of greater than or equal to 700 gpm, when tested pursuant to Specification 4.0.5.
- c. At least once per 18 months during shutdown, by:
 1. Verifying that each automatic valve in the flow path actuates to its correct position on a Containment Pressure--High-High test signal.
 2. Verifying that each spray pump starts automatically on a Containment Pressure--High-High test signal.
- d. At least once per 5 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

† The provisions of Technical Specification 4.0.2 are applicable.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c. At least once per 18 months during shutdown, by verifying that each automatic valve in the flow path actuates to its correct position on a Containment Pressure--High-High test signal.†
- d. At least once per 5 years by verifying a water flow rate of at least 20 gpm (greater than or equal to 20 gpm) but not to exceed 50 gpm (less than or equal to 50 gpm) from the spray additive tank test line to each containment spray system with the spray pump operating on recirculation with a pump discharge pressure greater than or equal to 255 psig. §

† The provisions of Technical Specification 4.0.8 are applicable.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.1.2 Each isolation valve specified in Table 3.6-1 shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:†

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

4.6.3.1.3 The isolation time of each power operated or automatic valve of Table 3.6-1 shall be determined to be within its limit when tested pursuant to Specification 4.0.5

† The provisions of Technical Specification 4.0.9 are applicable.

CONTAINMENT SYSTEMS

DIVIDER BARRIER SEAL

LIMITING CONDITION FOR OPERATION

3.6.5.9 The divider barrier seal shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the divider barrier seal inoperable, restore the seal to OPERABLE status prior to increasing the Reactor Coolant System temperature above 200°F.

SURVEILLANCE REQUIREMENTS

4.6.5.9 The divider barrier seal shall be determined OPERABLE at least once per 18 months during shutdown by:†

- a. Removing two divider barrier seal test coupons and verifying that the physical properties of the test coupons are within the acceptable range of values shown in Table 3.6-2.
- b. Visually inspecting at least 95 percent of the seal's entire length and:
 1. Verifying that the seal and seal mounting bolts are properly installed, and
 2. Verifying that the seal material shows no visual evidence of deterioration due to holes, ruptures, chemical attack, abrasion, radiation damage, or changes in physical appearances.

† The provisions of Technical Specification 4.0.8 are applicable.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

Change Margins

- 4.7.1.2 Each auxiliary feedwater pump shall be demonstrated OPERABLE when tested pursuant to Specification 4.0.5 by:
- a. Verifying that each motor driven pump develops an equivalent discharge pressure of greater than or equal to 1240 psig at 60°F in recirculation flow.
 - b. Verifying that the steam turbine driven pump develops an equivalent discharge pressure of greater than or equal to 1180 psig at 60°F and at a flow of greater than or equal to 700 gpm when the secondary steam supply pressure is greater than 310 psig. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.
 - c. Verifying that each non-automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in its correct position.
 - d. Verifying that each automatic valve in the flow path is in the fully open position whenever the auxiliary feedwater system is placed in automatic control or when above 10% RATED THERMAL POWER. This requirement is not applicable for those portions of the auxiliary feedwater system being used intermittently to maintain steam generator water level.
 - e. Verifying at least once per 18 months during shutdown that each automatic valve in the flow path actuates to its correct position upon receipt of the appropriate engineered safety features actuation test signal required by Specification 3/4.3.2.†
 - f. Verifying at least once per 18 months during shutdown that each auxiliary feedwater pump starts as designed automatically upon receipt of the appropriate engineered safety features actuation test signal required by Specification 3/4.3.2.†
 - g. Verifying at least once per 18 months during shutdown that the unit cross-tie valves can cycle full travel. Following cycling, the valves will be verified to be in their closed positions.

† The provisions of Technical Specification 4.0.8 are applicable.

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.

† The provisions of Technical Specification 4.0.8 are applicable.

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:

If 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.†

† The provisions of Technical Specification 4.6.8 are applicable.

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SURVEILLANCE REQUIREMENTS (Continued)

e. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the ventilation system at a flow rate of 6000 cfm plus or minus 10%. \$
2. Verifying that on a Safety Injection Signal from either Unit 1 or Unit 2, or on a containment phase A isolation signal, the system automatically diverts its inlet flow through the HEPA filters and charcoal adsorber bank and that either fan can then be manually started in the recirculation mode.† 1 \$
3. Verifying that the system maintains the control room at a positive pressure of greater than or equal to 1/16 inch W. G. relative to the outside atmosphere at a system flow rate of 6000 cfm plus or minus 10%. * *

f. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 6000 cfm plus or minus 10%. \$

g. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 6000 cfm plus or minus 10%. \$

† The provisions of Technical Specification 4.0.8 are applicable. 1

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SURVEILLANCE REQUIREMENTS (Continued)

- b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%. \$

- d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%. \$
2. Deleted.
3. Verifying that the standby fan starts automatically on a Containment Pressure--High-High Signal and directs its exhaust flow through the HEPA filters and charcoal adsorber banks on a Containment Pressure--High-High Signal. † 1 \$

- e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%. \$

- f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 25,000 cfm plus or minus 10%. \$

† The provisions of Technical Specification 4.0.8 are applicable, 1

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3/4.7.7 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.7.1 All snubbers listed in Table 3.7-9 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4. (MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES).

ACTION:

With one or more snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.7.1.c on the supported component or declare the supported system inoperable and follow the appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

4.7.7.1 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5.

a. Visual Inspection†

The first inservice visual inspection of snubbers shall be performed after four months but with 10 months of commencing POWER OPERATION and shall include all snubbers listed in Table 3.7-9. If less than two (2) snubbers are found inoperable during the first inservice visual inspection, the second inservice visual inspection shall be performed 12 months plus or minus 25% from the date of the first inspection. Otherwise, subsequent visual inspections shall be performed in accordance with the following schedule:

<u>No. Inoperable Snubbers per Inspection Period</u>	<u>Subsequent Visual Inspection Period*#</u>
0	18 months plus or minus 25%
1	12 months plus or minus 25%
2	6 months plus or minus 25%
3,4	124 days plus or minus 25%
5,6,7	62 days plus or minus 25%
8 or more	31 days plus or minus 25%

The snubbers may be categorized into two groups: Those accessible and those inaccessible during reactor operation. Each group may be inspected independently in accordance with the above schedule.

* The inspection interval shall not be lengthened more than one step at a time.

The provisions of Specification 4.0.2 are not applicable.

† The provisions of Technical Specification 4.0.8 are applicable.

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.e. 4
- 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.

*The fire protection water flow surveillance testing may be suspended until the completion of the fire protection water storage tank and fire pump installations (May 31, 1993). The surveillance testing suspended as a result of this amendment will be initiated at its normal frequency within four months of the new fire protection water storage tanks and fire pumps being declared OPERABLE, with the exception of unit outage required testing which would be completed before the end of the next scheduled unit outage.

† The provisions of ~~the~~ Technical Specification 4.0.8 are applicable. 1

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- a) A kinematic viscosity of greater than or equal to 1.9 centistokes but less than or equal to 4.1 centistokes at 40°C (alternatively, Saybolt viscosity, SUS at 100°F of greater than or equal to 32.6 but less than or equal to 40.1), if gravity was not determined by comparison with supplier's certification.
- b) A flash point equal to or greater than 125°F.
- 2) By verifying, in accordance with the test specified in ASTM D1298-80 and prior to adding the new fuel to the storage tanks, that the sample has either an API gravity of greater than or equal to 30 degrees but less than or equal to 40 degrees at 60°F or an absolute specific gravity at 60/60°F of greater than or equal to 0.82 but less than or equal to 0.88, or an API gravity of within 0.3 degrees at 60°F when compared to the supplier's certificate or a specific gravity of within 0.0016 at 60/60°F when compared to the supplier's certificate.
- 3) By verifying, in accordance with the test specified in ASTM D4176-82 and prior to adding new fuel to the storage tanks, that the sample has a clear and bright appearance with proper color.
- 4) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are within the appropriate limits when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D2622-82.
- d. At least once per 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-83, and verifying that total particulate contamination is less than 10 mg/liter when tested in accordance with ASTM D2276-83, Method A*.
- e. At least once per 18 months, during shutdown, by:
 1. Subjecting the diesel engine to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service,

*The actions to be taken should any of the properties be found outside of the specified limits are defined in the Bases.

† The provisions of Technical Specification 4.0.8 are applicable.

~~D. C. COOK~~ UNIT 2
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ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

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

- a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and
- b. One diesel generator with:
 1. A day fuel tank containing a minimum of 70 gallons of fuel,
 2. A fuel storage system containing a minimum indicated volume of 46,000 gallons of fuel, and
 3. A fuel transfer pump.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes* until the minimum required A.C. electrical power sources are restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5.†

*For purposes of this specification, addition of water from the RWST does not constitute a positive reactivity addition provided the boron concentration in the RWST is greater than the minimum required by Specification 3.1.2.7.b.2.

† The provisions of Technical Specification 4.0.8 are applicable.

FORM NIS-2 (Back)

Remarks UNIT 2, REPLACED DISC IN VALVE 2-CS-300W.Applicable Manufacturer's Data Reports to be attachedDISC PURCHASED PER SPEC. DCCPV802OCN AND P.O.00746-041-2X.Ref. JO # B007224 File:ME-VAL-2-CS-300WISI Class: 2

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this
REPLACEMENT conforms to the rules of the ASME Code, Section XI.
 repair or replacement

Type Code Symbol Stamp N/ACertificate of Authorization No. N/A Expiration Date N/A

Signed F.R. Pisarsky, Maint. Eng. Supervisor Date 3-15, 19 93
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by ARKWRIGHT MUTUAL INS. CO.* of NORWOOD, MASS. have inspected the components described in this Owner's Report during the period 4-13-93 to , and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

MR. [Signature] Commissions MICH 0055, ENP N.Y.I
 Inspector's Signature National Board, State, Province, Endorsements

Date 4-13 19 93

*FACTORY MUTUAL ENGINEERING ASSOCIATION