

REACTIVITY CONTROL SYSTEMS

CHARGING PUMP - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.3

- a. One charging pump in the boron injection flow path required by Specification 3.1.2.1 shall be OPERABLE and capable of being powered from an OPERABLE emergency bus.
- b. One charging flowpath associated with support of Unit 2 shutdown functions shall be available.*

APPLICABILITY: Specification 3.1.2.3.a. - MODES 5 and 6
Specification 3.1.2.3.b. - At all times when Unit 2 is in MODES 1, 2, 3, or 4.

ACTION:

- a. With no charging pump OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.**
- b. With more than one charging pump OPERABLE or with a safety injection pump(s) OPERABLE when the temperature of any RCS cold leg is less than or equal to 152°F, unless the reactor vessel head is removed, remove the additional charging pump(s) and the safety injection pump(s) motor circuit breakers from the electrical power circuit within one hour.
- c. The provisions of Specification 3.0.3 are not applicable.
- d. In addition to the above, when Specification 3.1.2.3.b is applicable and the required flow path is not available, return the required flow path to available status within 7 days, or provide equivalent shutdown capability in Unit 2 and return the required 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.
- e. The requirements of Specification 3.0.4 are not applicable when Specification 3.1.2.3.b applies.

SURVEILLANCE REQUIREMENTS

THE PUMP'S DEVELOPED HEAD AT THE TEST FLOW POINT IS GREATER THAN OR EQUAL TO THE REQUIRED DEVELOPED HEAD

4.1.2.3.1 The above required charging pump shall be demonstrated OPERABLE by verifying that ~~on recirculation flow, the pump develops a discharge pressure of greater than or equal to 2190 psig~~ when tested pursuant to Specification 4.0.5.

*A maximum of one centrifugal charging pump shall be OPERABLE whenever the temperature of one or more of the RCS cold legs is less than or equal to 152°F.

**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.

COOK NUCLEAR PLANT - UNIT 1

3/4.1-11

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131, 134
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REACTIVITY CONTROL SYSTEMS

CHARGING PUMPS - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.4 At least two charging pumps shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one charging pump OPERABLE, restore at least two charging pumps to OPERABLE status within 72 hours or be in HOT STANDBY within the next 6 hours; restore at least two charging pumps to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.1.2.4 At least two charging pumps shall be demonstrated OPERABLE by verifying ~~that, on recirculation flow, each pump develops a discharge pressure of greater than or equal to 2405 psig~~ when tested pursuant to Specification 4.0.5.

THE PUMPS' DEVELOPED HEAD AT THE TEST FLOW POINT IS GREATER THAN OR EQUAL TO THE REQUIRED DEVELOPED HEAD...

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 abnormal 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 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.

... developed head at the test flow point
is greater than or equal to the required
developed head.

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 10 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

"By verifying that each containment spray pump's developed head at the test flow point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5."

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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 1375 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 1285 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.

a. "Verifying that each motor driven auxiliary feedwater pump's developed head at the test flow point is greater than or equal to the required developed head."

b. "Verifying that the turbine driven auxiliary feedwater pump's developed head at the test flow point is greater than or equal to the required developed head 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."



REACTIVITY CONTROL SYSTEMS

CHARGING PUMP - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.3

- a. One charging pump in the boron injection flow path required by Specification 3.1.2.1 shall be OPERABLE and capable of being powered from an OPERABLE emergency bus.
- b. One charging flow path associated with support of Unit 1 shutdown functions shall be available.*

APPLICABILITY: Specification 3.1.2.3.a. - MODES 5 and 6
Specification 3.1.2.3.b. - At all times when Unit 1 is in MODES 1, 2, 3, or 4.

ACTION:

- a. With no charging pump OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.**
- b. With more than one charging pump OPERABLE or with a safety injection pump(s) OPERABLE when the temperature of any RCS cold leg is less than or equal to 152°F, unless the reactor vessel head is removed, remove the additional charging pump(s) and the safety injection pump(s) motor circuit breakers from the electrical power circuit within one hour.
- c. The provisions of Specification 3.0.3 are not applicable.
- d. In addition to the above, when Specification 3.1.2.3.b is applicable and the required flow path is not available, return the required flow path to available status within 7 days, or provide equivalent shutdown capability in Unit 1 and return the required 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.
- e. The requirements of Specification 3.0.4 are not applicable when Specification 3.1.2.3.b applies.

SURVEILLANCE REQUIREMENTS

THE PUMP'S DEVELOPED HEAD AT THE TEST FLOW POINT IS GREATER THAN OR EQUAL TO THE REQUIRED DEVELOPED HEAD

4.1.2.3.1 The above required charging pump shall be demonstrated OPERABLE by verifying that ~~on recirculation flow, the pump develops a discharge pressure of greater than or equal to 2390 psig~~ when tested pursuant to Specification 4.0.5.

*A maximum of one centrifugal charging pump shall be OPERABLE whenever the temperature of one or more of the RCS cold legs is less than or equal to 152°F.

*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.

REACTIVITY CONTROL SYSTEMS

CHARGING PUMPS - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.4 At least two charging pumps shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one charging pump OPERABLE, restore at least two charging pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY and borated to a SHUTDOWN MARGIN equivalent to at least 1% $\Delta k/k$ at 200°F within the next 6 hours; restore at least two charging pumps to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.

SURVEILLANCE REQUIREMENTS

4.1.2.4 At least two charging pumps shall be demonstrated OPERABLE by verifying that on recirculation flow, each pump develops a discharge pressure of ≥ 2405 psig when tested pursuant to Specification 4.0.5.

THE PUMP'S DEVELOPED HEAD AT THE TEST FLOW POINT IS GREATER THAN OR EQUAL TO THE REQUIRED DEVELOPED HEAD...

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

d. At least once per 18 months by:

1. Verifying automatic isolation and interlock action of the RER 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.X

e. At least once per 18 months, during shutdown, by: X

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.~~

... developed head at the test flow point
is greater than or equal to the required
developed head ...

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: ~~X~~
 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 10 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

"By verifying that each containment spray pump's developed head at the test flow point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5."

~~† 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.X
- 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.X
- 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.

Q "Verifying that each motor driven auxiliary feedwater pump's developed head at the test flow point is greater than or equal to the required developed head."

5 "Verifying that the turbine driven auxiliary feedwater pump's developed head at the test flow point is greater than or equal to the required developed head 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."

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

ATTACHMENT 3 TO AEP:NRC:1211

PROPOSED REVISED
TECHNICAL SPECIFICATION PAGES

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.1 REACTIVITY CONTROL SYSTEMS

CHARGING PUMP - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.3

- a. One charging pump in the boron injection flow path required by Specification 3.1.2.1 shall be OPERABLE and capable of being powered from an OPERABLE emergency bus.
- b. One charging flowpath associated with support of Unit 2 shutdown functions shall be available.*

APPLICABILITY: Specification 3.1.2.3.a. - MODES 5 and 6
 Specification 3.1.2.3.b. - At all times when Unit 2 is in MODES 1, 2, 3, or 4.

ACTION:

- a. With no charging pump OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.**
- b. With more than one charging pump OPERABLE or with a safety injection pump(s) OPERABLE when the temperature of any RCS cold leg is less than or equal to 152°F, unless the reactor vessel head is removed, remove the additional charging pump(s) and the safety injection pump(s) motor circuit breakers from the electrical power circuit within one hour.
- c. The provisions of Specification 3.0.3 are not applicable.
- d. In addition to the above, when Specification 3.1.2.3.b is applicable and the required flow path is not available, return the required flow path to available status within 7 days, or provide equivalent shutdown capability in Unit 2 and return the required 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.
- e. The requirements of Specification 3.0.4 are not applicable when Specification 3.1.2.3.b applies.

SURVEILLANCE REQUIREMENTS

- 4.1.2.3.1 The above required charging pump shall be demonstrated OPERABLE by verifying that the pump's developed head at the test flow point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5.

*A maximum of one centrifugal charging pump shall be OPERABLE whenever the temperature of one or more of the RCS cold legs is less than or equal to 152°F.

**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.

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.1 REACTIVITY CONTROL SYSTEMS

CHARGING PUMPS - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.4 At least two charging pumps shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one charging pump OPERABLE, restore at least two charging pumps to OPERABLE status within 72 hours or be in HOT STANDBY within the next 6 hours; restore at least two charging pumps to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.1.2.4 At least two charging pumps shall be demonstrated OPERABLE by verifying that the pumps' developed head at the test flow point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

100

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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 abnormal 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 signal:
 - a) Centrifugal charging pump
 - b) Safety injection pump
 - c) Residual heat removal pump
- f. By verifying that each of the following pumps' developed head at the test flow point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5.
 - 1. Centrifugal charging pumps
 - 2. Safety injection pumps
 - 3. Residual heat removal pumps
- 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 subsystems are required to be OPERABLE.

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 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 each containment spray pump's developed head at the test flow point is greater than or equal to the required developed head 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 10 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

SURVEILLANCE REQUIREMENTS (Continued)

- 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 auxiliary feedwater pump's developed head at the test flow point is greater than or equal to the required developed head.
 - b. Verifying that the turbine driven auxiliary feedwater pump's developed head at the test flow point is greater than or equal to the required developed head 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.

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.1 REACTIVITY CONTROL SYSTEMS

CHARGING PUMP - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.3

- a. One charging pump in the boron injection flow path required by Specification 3.1.2.1 shall be OPERABLE and capable of being powered from an OPERABLE emergency bus.
- b. One charging flow path associated with support of Unit 1 shutdown functions shall be available.*

APPLICABILITY: Specification 3.1.2.3.a. - MODES 5 and 6
Specification 3.1.2.3.b. - At all times when Unit 1 is in MODES 1, 2, 3, or 4.

ACTION:

- a. With no charging pump OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.**
- b. With more than one charging pump OPERABLE or with a safety injection pump(s) OPERABLE when the temperature of any RCS cold leg is less than or equal to 152°F, unless the reactor vessel head is removed, remove the additional charging pump(s) and the safety injection pump(s) motor circuit breakers from the electrical power circuit within one hour.
- c. The provisions of Specification 3.0.3 are not applicable.
- d. In addition to the above, when Specification 3.1.2.3.b is applicable and the required flow path is not available, return the required flow path to available status within 7 days, or provide equivalent shutdown capability in Unit 1 and return the required 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.
- e. The requirements of Specification 3.0.4 are not applicable when Specification 3.1.2.3.b applies.

SURVEILLANCE REQUIREMENTS

- 4.1.2.3.1 The above required charging pump shall be demonstrated OPERABLE by verifying that the pump's developed head at the test flow point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5.

*A maximum of one centrifugal charging pump shall be OPERABLE whenever the temperature of one or more of the RCS cold legs is less than or equal to 152°F.

**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.

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.1 REACTIVITY CONTROL SYSTEMS

CHARGING PUMPS - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.4 At least two charging pumps shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one charging pump OPERABLE, restore at least two charging pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY and borated to a SHUTDOWN MARGIN equivalent to at least 1% $\Delta k/k$ at 200°F within the next 6 hours; restore at least two charging pumps to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.

SURVEILLANCE REQUIREMENTS

4.1.2.4 At least two charging pumps shall be demonstrated OPERABLE by verifying that the pumps' developed head at the test flow point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5.

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' developed head at the test flow point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5.
 - 1. Centrifugal charging pumps
 - 2. Safety injection pumps
 - 3. Residual heat removal pumps
- 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 subsystems are required to be OPERABLE.

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS
3/4.6 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 each containment spray pump's developed head at the test flow point is greater than or equal to the required developed head 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 10 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

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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 auxiliary feed pump's developed head at the test flow point is greater than or equal to the required developed head.
 - b. Verifying that the turbine driven auxiliary feedwater pump's developed head at the test flow point is greater than or equal to the required developed head 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.