

REACTIVITY CONTROL SYSTEMS

BORIC ACID PUMPS – SHUTDOWN

LIMITING CONDITION FOR OPERATION

- 3.1.2.5 At least one boric acid pump shall be OPERABLE if only the flow path through the boric acid pump in Specification 3.1.2.1a above, is OPERABLE.

APPLICABILITY: MODES 5 and 6.

ACTION:

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

SURVEILLANCE REQUIREMENTS

- 4.1.2.5 The above required boric acid pump shall be demonstrated OPERABLE by verifying that the pump develops the specified discharge pressure when tested pursuant to the Inservice Testing Program.

* Plant temperature changes are allowed provided the temperature change is accounted for in the calculated SHUTDOWN MARGIN.

REACTIVITY CONTROL SYSTEMS

BORIC ACID PUMPS – OPERATING

LIMITING CONDITION FOR OPERATION

- 3.1.2.6 At least the boric acid pump(s) in the boron injection flow path(s) required OPERABLE pursuant to Specification 3.1.2.2a shall be OPERABLE if the flow path through the boric acid pump in Specification 3.1.2.2a is OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one boric acid pump required for boron injection flow path(s) pursuant to Specification 3.1.2.2a inoperable, restore the boric acid pump to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

- 4.1.2.6 The above required boric acid pump(s) shall be demonstrated OPERABLE by verifying that the pump(s) develop the specified discharge pressure when tested pursuant to the Inservice Testing Program.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (continued)

- 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 Actuation Signal.
 - 2. Verifying that each of the following pumps start automatically upon receipt of a Safety Injection Actuation Signal;
 - a. High-Pressure Safety Injection Pump.
 - b. Low-Pressure Safety Injection Pump.
 - 3. Verifying that upon receipt of an actual or simulated Recirculation Actuation Signal: each low-pressure safety injection pump stops, each containment sump isolation valve opens, each refueling water tank outlet valve closes, and each safety injection system recirculation valve to the refueling water tank closes.

- f. By verifying that each of the following pumps develops the specified total developed head when tested pursuant to the Inservice Testing Program.
 - 1. High-Pressure Safety Injection pumps. |
 - 2. Low-Pressure Safety Injection pumps. |

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 positioned to take suction from the RWT on a Containment Pressure -- High High test signal.
- b. By verifying that each spray pump develops the specified discharge pressure when tested pursuant to the Inservice Testing Program.

REACTIVITY CONTROL SYSTEMS

BORIC ACID MAKEUP PUMPS – SHUTDOWN

LIMITING CONDITION FOR OPERATION

- 3.1.2.5 At least one boric acid makeup pump shall be OPERABLE and capable of being powered from an OPERABLE emergency bus if only the flow path through the boric acid pump in Specification 3.1.2.1a is OPERABLE.

APPLICABILITY: MODES 5 and 6.

ACTION:

With no boric acid pump OPERABLE as required to complete the flow path of Specification 3.1.2.1a, suspend all operations involving CORE ALTERATIONS or positive reactivity changes*.

SURVEILLANCE REQUIREMENTS

- 4.1.2.5 The above required boric acid makeup pump shall be demonstrated OPERABLE by verifying that the pump develops the specified discharge pressure when tested pursuant to the Inservice Testing Program.

* Plant temperature changes are allowed provided the temperature change is accounted for in the calculated SHUTDOWN MARGIN.

REACTIVITY CONTROL SYSTEMS

BORIC ACID MAKEUP PUMPS – OPERATING

LIMITING CONDITION FOR OPERATION

- 3.1.2.6 At least the boric acid makeup pump(s) in the boron injection flow path(s) required OPERABLE pursuant to Specification 3.1.2.2 shall be OPERABLE and capable of being powered from an OPERABLE emergency bus if the flow path through the boric acid pump(s) in Specification 3.1.2.2 is OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With no boric acid makeup pump required for the boron injection flow path(s) pursuant to Specification 3.1.2.2 inoperable, restore the boric acid makeup pump to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and borated to a SHUTDOWN MARGIN equivalent to its COLR limit at 200°F; restore the above required boric acid makeup pump(s) to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.

SURVEILLANCE REQUIREMENTS

- 4.1.2.6 The above required boric acid makeup pump(s) shall be demonstrated OPERABLE by verifying that the pump(s) develop the specified discharge pressure when tested pursuant to the Inservice Testing Program.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (continued)

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.
 3. Verifying that a minimum total of 173 cubic feet of solid granular trisodium phosphate dodecahydrate (TSP) is contained within the TSP storage baskets.
 4. Verifying that when a representative sample of 70.5 ± 0.5 grams of TSP from a TSP storage basket is submerged, without agitation, in 10.0 ± 0.1 gallons of $120 \pm 10^\circ\text{F}$ borated water from the RWT, the pH of the mixed solution is raised to greater than or equal to 7 within 4 hours.
- f. 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 SIAS and/or RAS test signals.
 2. Verifying that each of the following pumps start automatically upon receipt of a Safety Injection Actuation Test Signal:
 - a. High-Pressure Safety Injection pump.
 - b. Low-Pressure Safety Injection pump.
 3. Verifying that upon receipt of an actual or simulated Recirculation Actuation Signal: each low-pressure safety injection pump stops, each containment sump isolation valve opens, each refueling water tank outlet valve closes, and each safety injection system recirculation valve to the refueling water tank closes.
- g. By verifying that each of the following pumps develops the specified total developed head when tested pursuant to the Inservice Testing Program:
1. High-Pressure Safety Injection pumps.
 2. Low-Pressure Safety Injection pumps.
- h. By verifying the correct position of each electrical and/or mechanical position stop for the following ECCS throttle valves:
1. During valve stroking operation or following maintenance on the valve and prior to declaring the valve OPERABLE when the ECCS subsystems are required to be OPERABLE.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. At least once per 18 months.

<u>HPSI System</u> <u>Valve Number</u>	<u>LPSI System</u> <u>Valve Number</u>
a. HCV 3616/3617	a. HCV 3615
b. HCV 3626/3627	b. HCV 3625
c. HCV 3636/3637	c. HCV 3635
d. HCV 3646/3647	d. HCV 3645
e. V3523/V3540	

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 positioned to take suction from the RWT on a Containment Pressure -- High-High test signal.
- b. By verifying that each spray pump develops the specified discharge pressure when tested pursuant to the Inservice Testing Program.
- 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 CSAS test signal.
 2. Verifying that upon a Recirculation Actuation Test Signal (RAS), the containment sump isolation valves open and that a recirculation mode flow path via an OPERABLE shutdown cooling heat exchanger is established.