Enclosure 3

Joseph M. Farley Nuclear Plant Unit 1
Elimination of Containment Spray Additive System
Technical Specification Changes

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B 3/4 5-3	B 3/4 5-3
B 3/4 6-3	B 3/4 6-3

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3/4.5.6 ECCS RECIRCULATION FLUID pH CONTROL SYSTEM

LIMITING CONDITION FOR OPERATION

3.5.6 The recirculation fluid pH control system shall be OPERABLE with a total of between 10,000 pounds (185 cubic feet) and 12,900 pounds (215 cubic feet) of trisodium phosphate compound as $Na_3PO_4 \cdot 12H_2O \cdot \frac{1}{4}NaOH$ (or appropriate weights/volumes for equivalent compounds) available in the storage baskets in the containment building.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the recirculation fluid pH control system INOPERABLE, restore the system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the recirculation fluid pH control system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.6 During each refueling outage the recirculation fluid pH control system shall be demonstrated OPERABLE by performing a visual inspection to verify that the:

a. Three (3) storage baskets are in place,

b. Baskets have maintained their integrity,

c. Baskets are filled with trisodium phosphate compound such that the level is between the indicated fill marks on the baskets.

SPRAY ADDITIVE SYSTEM

SPECIFICATION 3.6.2.2 DELETED.

BORATION SYSTEMS (Continued)

MARGIN from expected operating conditions of 1.77% delta k/k after xenon decay and cooldown to 200°F. The maximum expected boration capability requirement occurs at EOL from full power equilibrium xenon conditions and requires 11,336 gallons of 7000 ppm borated water from the boric acid storage tanks or 44,826 gallons of 2300 ppm borated water from the refueling water storage tank.

With the RCS temperature below 200°F, one injection system is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting CORE ALTERATIONS and positive reactivity changes in the event the single injection system becomes inoperable.

The limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps except the required OPERABLE pump to be inoperable below 180°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single RHR relief valve.

The boron capability required below 200°F is sufficient to provide a SHUTDOWN MARGIN of 1% delta k/k after xenon decay and cooldown from 200°F to 140°F. This condition requires either 2,000 gallons of 7000 ppm borated water from the boric acid storage tanks or 7,750 gallons of 2300 ppm borated water from the refueling water storage tank.

The contained water volume limits include allowance for water not available because of discharge line location and other physical characteristics.

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between 7.5 and 10.5 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

The OPERABILITY of one boron injection system during REFUELING ensures that this system is available for reactivity control while in MODE 6.

3/4.1.3 MOVABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) limit the potential effects of rod misalignment on associated accident analyses. OPERABILITY of the control rod position indicators is required to determine control rod positions and thereby ensure compliance with the control rod alignment and insertion limits.

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between 7.5 and 10.5 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

3/4.5.6 ECCS RECIRCULATION FLUID pH CONTROL SYSTEM

The OPERABILITY of the ECCS recirculation fluid pH control system ensures that there is a total of between 10,000 pounds (185 cubic feet) and 12,900 pounds (215 cubic feet) of trisodium phosphate compound as $Na_3PO_4 \cdot 12H_2O \cdot \frac{1}{4}NaOH$ (or appropriate weights/volumes for equivalent compounds) available in the storage baskets in containment to raise the pH of the recirculating solution into the range of 7.5 to 10.5. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. The verification that the storage baskets contain the required amount of trisodium phosphate compound level is accomplished by verifying that the trisodium phosphate compound level is between the indicated fill marks on the baskets. An equivalent amount of trisodium phosphate compound with a different chemical formula may be used. When equivalent compounds are used, the allowable weights/volumes may be different; however, the equivalent amount of trisodium phosphate compound must raise the pH of the recirculating solution into the range of 7.5 to 10.5.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

3/4.6.2.1 CONTAINMENT SPRAY SYSTEM

The OPERABILITY of the containment spray system ensures that containment depressurization and cooling capability will be available in the event of a LOCA. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the accident analyses.

The containment spray system and the containment cooling system are redundant to each other in providing post accident cooling of the containment atmosphere. However, the containment spray system also provides a mechanism for removing iodine from the containment atmosphere and therefore the time requirements for restoring an inoperable spray system to OPERABLE status have been maintained consistent with that assigned other inoperable ESF equipment.

3/4.6.2.2 SPRAY ADDITIVE SYSTEM

THIS SPECIFICATION DELETED.

3/4.6.2.3 CONTAINMENT COOLING SYSTEM

The OPERABILITY of the containment cooling system ensures that 1) the containment air temperature will be maintained within limits during normal operation, and 2) adequate heat removal capacity is available when operated in conjunction with the containment spray systems during post-LOCA conditions.

The containment cooling system and the containment spray system are redundant to each other in providing post accident cooling of the containment atmosphere. As a result of this redundancy in cooling capability, the allowable out of service time requirements for the containment cooling system have been appropriately adjusted. However, the allowable out of service time requirements for the containment spray system have been maintained consistent with that assigned other inoperable ESF equipment since the containment spray system also provides a mechanism for removing iodine from the containment atmosphere.

Enclosure 4

Joseph M. Farley Nuclear Plant Unit 2
Elimination of Containment Spray Additive System
Technical Specification Changes

Page Change Instructions

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VI	VI
VII	VII
--	3/4 5-12
3/4 6-12	3/4 6-12
3/4 8-31	3/4 8-31
B 3/4 1-3	B 3/4 1-3
B 3/4 5-3	B 3/4 5-3
B 3/4 6-3	B 3/4 6-3

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3/4.5.6 ECCS RECIRCULATION FLUID pH CONTROL SYSTEM

LIMITING CONDITION FOR OPERATION

3.5.6 The recirculation fluid pH control system shall be OPERABLE with a total of between 10,000 pounds (185 cubic feet) and 12,900 pounds (215 cubic feet) of trisodium phosphate compound as $Na_3PO_4 \cdot 12H_2O \cdot \frac{1}{4}NaOH$ (or appropriate weights/volumes for equivalent compounds) available in the storage baskets in the containment building.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the recirculation fluid pH control system INOPERABLE, restore the system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the recirculation fluid pH control system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.6 During each refueling outage the recirculation fluid pH control system shall be demonstrated OPERABLE by performing a visual inspection to verify that the:

a. Three (3) storage baskets are in place,

b. Baskets have maintained their integrity,

c. Baskets are filled with trisodium phosphate compound such that the level is between the indicated fill marks on the baskets.

SPRAY ADDITIVE SYSTEM

SPECIFICATION 3.6.2.2 DELETED.

TABLE 3.8-2 (Continued)

MOTOR OPERATED VALVES THERMAL OVERLOAD PROTECTION DEVICES*

VALVE NUMBER	FUNCTION	BYPASS DEVICE
MOV-8106	Charging Pump Mini Flow Isolation	No
MOV-8826A	Containment Spray Suction from Containment Sump	No
MOV-8826B	Containment Spray Suction from Containment Sump	No
MOV-8827A	Containment Spray Suction from Containment Sump	No
MOV-8827B	Containment Spray Suction from Containment Sump	No
MOV-8817A	Containment Spray Suction from RWST	No
MOV-8817B	Containment Spray Suction from RWST	No
MOV-8820A	Discharge to Spray Ring	No
MOV-8820B	Discharge to Spray Ring	No
MOV-8803A	BIT Inlet	No
MOV-8803B	BIT Inlet	No
MOV-8801A	BIT Outlet	No
MOV-8801B	BIT Outlet	No
MOV-8886	Charging Pump Discharge to Hot Leg	No
MOV-8884	Charging Pump Discharge to Hot Leg	No
MOV-8885	Charging Pump Discharge to Cold Leg	No
MOV-8808A	SIS Accumulator Outlet	No
MOV-8808B	SIS Accumulator Outlet	No
MOV-8808C	SIS Accumulator Outlet	No
MOV-8811A	RHR Suction from Containment Sump	No
MOV-8811B	RHR Suction from Containment Sump	No
MOV-8812A	RHR Suction from Containment Sump	No
MOV-8812B	RHR Suction from Containment Sump	No
MOV-8809A	RHR Suction from RWST	No
MOV-8809B	RHR Suction from RWST	No
MOV-8887A	RHR Discharge Crossconnect	No
MOV-8887B	RHR Discharge Crossconnect	No
FCV-602B	RHR Pump Mini Flow	No
FCV-602A	RHR Pump Mini Flow	No
MOV-8889	RHR Discharge to Hot Leg	No
MOV-8888A	RHR Discharge to Cold Leg	No
MOV-8888B	RHR Discharge to Cold Leg	No
MOV-8706A	RHR Discharge to Charging Pump Suction	No
MOV-8706B	RHR Discharge to Charging Pump Suction	No
MOV-8112	Seal Water Return Containment Isolation	No
MOV-8100	Seal Water Return Containment Isolation	No

BORATION SYSTEMS (Continued)

MARGIN from expected operating conditions of 1.77% delta k/k after xenon decay and cooldown to 200°F. The maximum expected boration capability requirement occurs at EOL from full power equilibrium xenon conditions and requires 11,336 gallons of 7000 ppm borated water from the boric acid storage tanks or 44,826 gallons of 2300 ppm borated water from the refueling water storage tank.

With the RCS temperature below 200°F, one injection system is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting CORE ALTERATIONS and positive reactivity changes in the event the single injection system becomes inoperable.

The limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps except the required OPERABLE pump to be inoperable below 180°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single RHR relief valve.

The boron capability required below 200°F is sufficient to provide a SHUTDOWN MARGIN of 1% delta k/k after xenon decay and cooldown from 200°F to 140°F. This condition requires either 2,000 gallons of 7000 ppm borated water from the boric acid storage tanks or 7,750 gallons of 2300 ppm borated water from the refueling water storage tank.

The contained water volume limits include allowance for water not available because of discharge line location and other physical characteristics.

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between 7.5 and 10.5 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

The OPERABILITY of one boron injection system during REFUELING ensures that this system is available for reactivity control while in MODE 6.

3/4.1.3 MOVABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) limit the potential effects of rod misalignment on associated accident analyses. OPERABILITY of the control rod position indicators is required to determine control rod positions and thereby ensure compliance with the control rod alignment and insertion limits.

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between 7.5 and 10.5 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

3/4.5.6 ECCS RECIRCULATION FLUID pH CONTROL SYSTEM

The OPERABILITY of the ECCS recirculation fluid pH control system ensures that there is a total of between 10,000 pounds (185 cubic feet) and 12,900 pounds (215 cubic feet) of trisodium phosphate compound as $Na_3PO_4 \cdot 12H_2O \cdot \frac{1}{4}NaOH$ (or appropriate weights/volumes for equivalent compounds) available in the storage baskets in containment to raise the pH of the recirculating solution into the range of 7.5 to 10.5. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. The verification that the storage baskets contain the required amount of trisodium phosphate compound level is accomplished by verifying that the trisodium phosphate compound level is between the indicated fill marks on the baskets. An equivalent amount of trisodium phosphate compound with a different chemical formula may be used. When equivalent compounds are used, the allowable weights/volumes may be different; however, the equivalent amount of trisodium phosphate compound must raise the pH of the recirculating solution into the range of 7.5 to 10.5.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

3/4.6.2.1 CONTAINMENT SPRAY SYSTEM

The OPERABILITY of the containment spray system ensures that containment depressurization and cooling capability will be available in the event of a LOCA. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the accident analyses.

The containment spray system and the containment cooling system are redundant to each other in providing post accident cooling of the containment atmosphere. However, the containment spray system also provides a mechanism for removing iodine from the containment atmosphere and therefore the time requirements for restoring an inoperable spray system to OPERABLE status have been maintained consistent with the assigned other inoperable ESF equipment.

3/4.6.2.2 SPRAY ADDITIVE SYSTEM

THIS SPECIFICATION DELETED.

3/4.6.2.3 CONTAINMENT COOLING SYSTEM

The OPERABILITY of the containment cooling system ensures that 1) the containment air temperature will be maintained within limits during normal operation, and 2) adequate heat removal capacity is available when operated in conjunction with the containment spray systems during post-LOCA conditions.

The containment cooling system and the containment spray system are redundant to each other in providing post accident cooling of the containment atmosphere. As a result of this redundancy in cooling capability, the allowable out of service time requirements for the containment cooling system have been appropriately adjusted. However, the allowable out of service time requirements for the containment spray system have been maintained consistent with that assigned other inoperable ESF equipment since the containment spray system also provides a mechanism for removing iodine from the containment atmosphere.

Enclosure 5

Joseph M. Farley Nuclear Plant Units 1 & 2
Elimination of Containment Spray Additive System
Technical Specification Changes

Marked-Up Pages

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3/4.5.6 ECCS RECIRCULATION FLUID pH CONTROL SYSTEM

LIMITING CONDITION FOR OPERATION

3.5.6 The recirculation fluid pH control system shall be OPERABLE with a total of between 10,000 pounds (185 cubic feet) and 12,900 pounds (215 cubic feet) of trisodium phosphate compound as $Na_3PO_4 \cdot 12H_2O \cdot \frac{1}{4}NaOH$ (or appropriate weights/volumes for equivalent compounds) available in the storage baskets in the containment building.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the recirculation fluid pH control system INOPERABLE, restore the system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the recirculation fluid pH control system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.6 During each refueling outage the recirculation fluid pH control system shall be demonstrated OPERABLE by performing a visual inspection to verify that the:

a. Three (3) storage baskets are in place,

b. Baskets have maintained their integrity,

c. Baskets are filled with trisodium phosphate compound such that the level is between the indicated fill marks on the baskets.

SPRAY ADDITIVE SYSTEM

Specification 3.6.2.2 Deleted

LIMITING CONDITION FOR OPERATION

3.6.2.2 The spray additive system shall be OPERABLE with:

a. A spray additive tank containing a volume of between 3600 and 4000 gallons of between 30 and 32 percent by weight NaOH solution, and

b. Two spray additive eductors each capable of adding NaOH solution from the chemical additive tank to a containment spray system pump flow.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

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

SURVEILLANCE REQUIREMENTS

4.6.2.2 The spray additive 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. At least once per 6 months by:

1. Verifying the contained solution volume in the tank, and

2. Verifying the concentration of the NaOH solution by chemical analysis.

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 Phase B signal.

d. At least once per 5 years by verifying each solution flow rate from drain valve 1CS-V-8834:

1. Via the additive tank

2. Via 1CS-MOV-8836A

3. Via 1CS-MOV-8836B

BORATION SYSTEMS (Continued)

MARGIN from expected operating conditions of 1.77% delta k/k after xenon decay and cooldown to 200°F. The maximum expected boration capability requirement occurs at EOL from full power equilibrium xenon conditions and requires 11,336 gallons of 7000 ppm borated water from the boric acid storage tanks or 44,826 gallons of 2300 ppm borated water from the refueling water storage tank.

With the RCS temperature below 200°F, one injection system is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting CORE ALTERATIONS and positive reactivity changes in the event the single injection system becomes inoperable.

The limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps except the required OPERABLE pump to be inoperable below 180°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single RHR relief valve.

The boron capability required below 200°F is sufficient to provide a SHUTDOWN MARGIN of 1% delta k/k after xenon decay and cooldown from 200°F to 140°F. This condition requires either 2,000 gallons of 7000 ppm borated water from the boric acid storage tanks or 7,750 gallons of 2300 ppm borated water from the refueling water storage tank.

The contained water volume limits include allowance for water not available because of discharge line location and other physical characteristics.

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between ~~0.5 and 11.0~~ 7.5 and 10.5 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

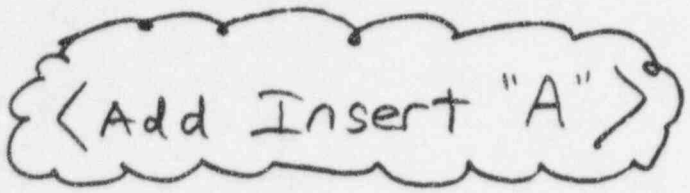
The OPERABILITY of one boron injection system during REFUELING ensures that this system is available for reactivity control while in MODE 6.

3/4.1.3 MOVABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) limit the potential effects of rod misalignment on associated accident analyses. OPERABILITY of the control rod position indicators is required to determine control rod positions and thereby ensure compliance with the control rod alignment and insertion limits.

BASES

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between 7.5 and 10.5 ~~8.5 and 11.0~~ for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.



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3/4.5.6 ECCS RECIRCULATION FLUID pH CONTROL SYSTEM

The OPERABILITY of the ECCS recirculation fluid pH control system ensures that there is a total of between 10,000 pounds (185 cubic feet) and 12,900 pounds (215 cubic feet) of trisodium phosphate compound as $Na_3PO_4 \cdot 12H_2O \cdot \frac{1}{4}NaOH$ (or appropriate weights/volumes for equivalent compounds) available in the storage baskets in containment to raise the pH of the recirculating solution into the range of 7.5 to 10.5. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. The verification that the storage baskets contain the required amount of trisodium phosphate compound level is accomplished by verifying that the trisodium phosphate compound level is between the indicated fill marks on the baskets. An equivalent amount of trisodium phosphate compound with a different chemical formula may be used. When equivalent compounds are used, the allowable weights/volumes may be different; however, the equivalent amount of trisodium phosphate compound must raise the pH of the recirculating solution into the range of 7.5 to 10.5.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

3/4.6.2.1 CONTAINMENT SPRAY SYSTEM

The OPERABILITY of the containment spray system ensures that containment depressurization and cooling capability will be available in the event of a LOCA. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the accident analyses.

The containment spray system and the containment cooling system are redundant to each other in providing post accident cooling of the containment atmosphere. However, the containment spray system also provides a mechanism for removing iodine from the containment atmosphere and therefore the time requirements for restoring an inoperable spray system to OPERABLE status have been maintained consistent with that assigned other inoperable ESF equipment.

3/4.6.2.2 SPRAY ADDITIVE SYSTEM

The OPERABILITY of the spray additive system ensures that sufficient NaOH is added to the containment spray in the event of a LOCA. The limits on NaOH volume and concentration ensure a pH value of between 8.5 and 11.0 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics. These assumptions are consistent with the iodine removal efficiency assumed in the accident analyses.

3/4.6.2.3 CONTAINMENT COOLING SYSTEM

The OPERABILITY of the containment cooling system ensures that 1) the containment air temperature will be maintained within limits during normal operation, and 2) adequate heat removal capacity is available when operated in conjunction with the containment spray systems during post-LOCA conditions.

The containment cooling system and the containment spray system are redundant to each other in providing post accident cooling of the containment atmosphere. As a result of this redundancy in cooling capability, the allowable out of service time requirements for the containment cooling system have been appropriately adjusted. However, the allowable out of service time requirements for the containment spray system have been maintained consistent with that assigned other inoperable ESF equipment since the containment spray system also provides a mechanism for removing iodine from the containment atmosphere.

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3/4.5.6 ECCS RECIRCULATION FLUID pH CONTROL SYSTEM

LIMITING CONDITION FOR OPERATION

3.5.6 The recirculation fluid pH control system shall be OPERABLE with a total of between 10,000 pounds (185 cubic feet) and 12,900 pounds (215 cubic feet) of trisodium phosphate compound as $Na_3PO_4 \cdot 12H_2O \cdot \frac{1}{4}NaOH$ (or appropriate weights/volumes for equivalent compounds) available in the storage baskets in the containment building.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the recirculation fluid pH control system INOPERABLE, restore the system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the recirculation fluid pH control system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.6 During each refueling outage the recirculation fluid pH control system shall be demonstrated OPERABLE by performing a visual inspection to verify that the:

a. Three (3) storage baskets are in place,

b. Baskets have maintained their integrity,

c. Baskets are filled with trisodium phosphate compound such that the level is between the indicated fill marks on the baskets.

SPRAY ADDITIVE SYSTEM

Specification 3.6.2.2 Deleted.

~~LIMITING CONDITION FOR OPERATION~~

3.6.2.2 The spray additive system shall be OPERABLE with:

a. A spray additive tank containing a volume of between 3600 and 4000 gallons of between 30 and 32 percent by weight NaOH solution, and

b. Two spray additive eductors each capable of adding NaOH solution from the chemical additive tank to a containment spray system pump flow.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

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

SURVEILLANCE REQUIREMENTS

4.6.2.2 The spray additive 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. At least once per 6 months by:

1. Verifying the contained solution volume in the tank, and

2. Verifying the concentration of the NaOH solution by chemical analysis.

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 Phase B signal.

d. At least once per 5 years by verifying each solution flow rate from drain valve 2CS-V-8834:

1.	Via the additive tank	12 ± 2 gpm
2.	Via 2CS-MOV-8836A	23 ± 4 gpm
3.	Via 2CS-MOV-8836B	23 ± 4 gpm

MOTOR OPERATED VALVES THERMAL OVERLOAD PROTECTION DEVICES*

VALVE NUMBER	FUNCTION	BYPASS DEVICE
MOV-8106	Charging Pump Mini Flow Isolation	No
MOV-8826A	Containment Spray Suction from Containment Sump	No
MOV-8826B	Containment Spray Suction from Containment Sump	No
MOV-8827A	Containment Spray Suction from Containment Sump	No
MOV-8827B	Containment Spray Suction from Containment Sump	No
MOV-8817A	Containment Spray Suction from RWST	No
MOV-8817B	Containment Spray Suction from RWST	No
~~MOV-8836A~~	~~Eductor Suction from Spray Additive Tank~~	~~No~~
~~MOV-8836B~~	~~Eductor Suction from Spray Additive Tank~~	~~No~~
MOV-8820A	Discharge to Spray Ring	No
MOV-8820B	Discharge to Spray Ring	No
MOV-8803A	BIT Inlet	No
MOV-8803B	BIT Inlet	No
MOV-8801A	BIT Outlet	No
MOV-8801B	BIT Outlet	No
MOV-8886	Charging Pump Discharge to Hot Leg	No
MOV-8884	Charging Pump Discharge to Hot Leg	No
MOV-8885	Charging Pump Discharge to Cold Leg	No
MOV-8808A	SIS Accumulator Outlet	No
MOV-8808B	SIS Accumulator Outlet	No
MOV-8808C	SIS Accumulator Outlet	No
MOV-8811A	RHR Suction from Containment Sump	No
MOV-8811B	RHR Suction from Containment Sump	No
MOV-8812A	RHR Suction from Containment Sump	No
MOV-8812B	RHR Suction from Containment Sump	No
MOV-8809A	RHR Suction from RWST	No
MOV-8809B	RHR Suction from RWST	No
MOV-8887A	RHR Discharge Crossconnect	No
MOV-8887B	RHR Discharge Crossconnect	No
FCV-602B	RHR Pump Mini Flow	No
FCV-602A	RHR Pump Mini Flow	No
MOV-8889	RHR Discharge to Hot Leg	No
MOV-8888A	RHR Discharge to Cold Leg	No
MOV-8888B	RHR Discharge to Cold Leg	No
MOV-8706A	RHR Discharge to Charging Pump Suction	No
MOV-8706B	RHR Discharge to Charging Pump Suction	No
MOV-8112	Seal Water Return Containment Isolation	No
MOV-8100	Seal Water Return Containment Isolation	No

BORATION SYSTEMS (Continued)

MARGIN from expected operating conditions of 1.77% delta k/k after xenon decay and cooldown to 200°F. The maximum expected boration capability requirement occurs at EOL from full power equilibrium xenon conditions and requires 11,336 gallons of 7000 ppm borated water from the boric acid storage tanks or 44,826 gallons of 2300 ppm borated water from the refueling water storage tank.

With the RCS temperature below 200°F, one injection system is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting CORE ALTERATIONS and positive reactivity changes in the event the single injection system becomes inoperable.

The limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps except the required OPERABLE pump to be inoperable below 180°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single RHR relief valve.

The boron capability required below 200°F is sufficient to provide a SHUTDOWN MARGIN of 1% delta k/k after xenon decay and cooldown from 200°F to 140°F. This condition requires either 2,000 gallons of 7000 ppm borated water from the boric acid storage tanks or 7,750 gallons of 2300 ppm borated water from the refueling water storage tank.

The contained water volume limits include allowance for water not available because of discharge line location and other physical characteristics.

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between ~~8.5 and 11.0~~ 7.5 and 10.5 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

The OPERABILITY of one boron injection system during REFUELING ensures that this system is available for reactivity control while in MODE 6.

3/4.1.3 MOVABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) limit the potential effects of rod misalignment on associated accident analyses. OPERABILITY of the control rod position indicators is required to determine control rod positions and thereby ensure compliance with the control rod alignment and insertion limits.

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between ~~8.5 and 11.0~~ 7.5 and 10.5 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

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3/4.5.6 ECCS RECIRCULATION FLUID pH CONTROL SYSTEM

The OPERABILITY of the ECCS recirculation fluid pH control system ensures that there is a total of between 10,000 pounds (185 cubic feet) and 12,900 pounds (215 cubic feet) of trisodium phosphate compound as $Na_3PO_4 \cdot 12H_2O \cdot \frac{1}{4}NaOH$ (or appropriate weights/volumes for equivalent compounds) available in the storage baskets in containment to raise the pH of the recirculating solution into the range of 7.5 to 10.5. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. The verification that the storage baskets contain the required amount of trisodium phosphate compound level is accomplished by verifying that the trisodium phosphate compound level is between the indicated fill marks on the baskets. An equivalent amount of trisodium phosphate compound with a different chemical formula may be used. When equivalent compounds are used, the allowable weights/volumes may be different; however, the equivalent amount of trisodium phosphate compound must raise the pH of the recirculating solution into the range of 7.5 to 10.5.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

3/4.6.2.1 CONTAINMENT SPRAY SYSTEM

The OPERABILITY of the containment spray system ensures that containment depressurization and cooling capability will be available in the event of a LOCA. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the accident analyses.

The containment spray system and the containment cooling system are redundant to each other in providing post accident cooling of the containment atmosphere. However, the containment spray system also provides a mechanism for removing iodine from the containment atmosphere and therefore the time requirements for restoring an inoperable spray system to OPERABLE status have been maintained consistent with the assigned other inoperable ESF equipment.

3/4.6.2.2 SPRAY ADDITIVE SYSTEM

The OPERABILITY of the spray additive system ensures that sufficient NaOH is added to the containment spray in the event of a LOCA. The limits on NaOH volume and concentration ensure a pH value of between 8.5 and 11.0 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics. These assumptions are consistent with the iodine removal efficiency assumed in the accident analyses.

3/4.6.2.3 CONTAINMENT COOLING SYSTEM

The OPERABILITY of the containment cooling system ensures that 1) the containment air temperature will be maintained within limits during normal operation, and 2) adequate heat removal capacity is available when operated in conjunction with the containment spray systems during post-LOCA conditions.

The containment cooling system and the containment spray system are redundant to each other in providing post accident cooling of the containment atmosphere. As a result of this redundancy in cooling capability, the allowable out of service time requirements for the containment cooling system have been appropriately adjusted. However, the allowable out of service time requirements for the containment spray system have been maintained consistent with that assigned other inoperable ESF equipment since the containment spray system also provides a mechanism for removing iodine from the containment atmosphere.