ATTACHMENT 1

DUKE POWER COMPANY
MCGUIRE NUCLEAR STATION

PROPOSED TECHNICAL SPECIFICATION REVISIONS

BORATED WATER SOURCE - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.5 As a minimum, one of the following borated water sources shall be OPERABLE:

a. A Boric Acid Storage System and at least one associated Heat Tracing System with:

   1) A minimum contained borated water volume of 6132 gallons,

   2) Between 7000 and 7700 ppm of boron, and

   3) A minimum solution temperature of 65°F.

b. The refueling water storage tank with:

   1) A minimum contained borated water volume of 26,000 gallons,

   2) A minimum boron concentration of 2000 ppm, and

   3) A minimum solution temperature of 70°F.

APPLICABILITY: MODES 5 and 6.

ACTION:

With no borated water source OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.

SURVEILLANCE REQUIREMENTS

4.1.2.5 The above required borated water source shall be demonstrated OPERABLE:

a. At least once per 7 days by:

   1) Verifying the boron concentration of the water,

   2) Verifying the contained borated water volume, and

   3) Verifying the boric acid storage tank solution temperature when it is the source of borated water.

b. At least once per 24 hours by verifying the RWST temperature when it is the source of borated water and the outside air temperature is less than 70°F.

REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCE - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.5 As a minimum, one of the following borated water sources shall be OPERABLE:

a. A Boric Acid Storage System and at least one associated Heat Tracing System with:

1) A minimum contained borated water volume of 6132 gallons,

2) Between 7000 and 7700 ppm of boron, and

3) A minimum solution temperature of 65°F.

b. The refueling water storage tank with:

1) A minimum contained borated water volume of 26,000 gallons,

2) A minimum boron concentration of ~~2000~~ 2175 ppm, and

3) A minimum solution temperature of 70°F.

APPLICABILITY: MODES 5 and 6.

ACTION:

With no borated water source OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.

SURVEILLANCE REQUIREMENTS

4.1.2.5 The above required borated water source shall be demonstrated OPERABLE:

a. At least once per 7 days by:

1) Verifying the boron concentration of the water,

2) Verifying the contained borated water volume, and

3) Verifying the boric acid storage tank solution temperature when it is the source of borated water.

b. At least once per 24 hours by verifying the RWST temperature when it is the source of borated water and the outside air temperature is less than 70°F.

REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.6 As a minimum, the following borated water source(s) shall be OPERABLE as required by Specification 3.1.2.2:

a. A Boric Acid Storage System and at least one associated Heat Tracing System with:

1) A minimum contained borated water volume of 20,453 gallons,

2) Between 7000 and 7700 ppm of boron, and

3) A minimum solution temperature of 65°F.

b. The refueling water storage tank with:

1) A contained borated water volume of at least 372,100 gallons,

2) Between 2000 and ~~2100~~ 2275 ppm of boron,

3) A minimum solution temperature of 70°F, and

4) A maximum solution temperature of 100°F.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With the Boric Acid Storage System inoperable and being used as one of the above required borated water sources, restore the storage system 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 at least 1% delta k/k at 200°F; restore the Boric Acid Storage System to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.

b. With the refueling water storage tank inoperable, restore the tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.6 As a minimum, the following borated water source(s) shall be OPERABLE as required by Specification 3.1.2.2:

a. A Boric Acid Storage System and at least one associated Heat Tracing System with:

   1) A minimum contained borated water volume of 20,453 gallons,

   2) Between 7000 and 7700 ppm of boron, and

   3) A minimum solution temperature of 65°F.

b. The refueling water storage tank with:

   1) A contained borated water volume of at least 372,100 gallons,

   2) Between ~~2000~~ 2175 and ~~2100~~ 2275 ppm of boron,

   3) A minimum solution temperature of 70°F, and

   4) A maximum solution temperature of 100°F.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With the Boric Acid Storage System inoperable and being used as one of the above required borated water sources, restore the storage system 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 at least 1% delta k/k at 200°F; restore the Boric Acid Storage System to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.

b. With the refueling water storage tank inoperable, restore the tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

3/4.5 EMERGENCY CORE COOLING SYSTEMS

3/4.5.1 ACCUMULATORS

COLD LEG INJECTION

LIMITING CONDITION FOR OPERATION

3.5.1.1 Each cold leg injection accumulator shall be OPERABLE with:

a. The isolation valve open,

b. A contained borated water volume of between 6870 and 7342 gallons,

c. A boron concentration of between 1900 and ~~2100~~ 2275 ppm,

d. A nitrogen cover-pressure of between 585 and 639 psig, and

e. A water level and pressure channel OPERABLE.

APPLICABILITY: MODES 1, 2, and 3*.

ACTION:

a. With one accumulator inoperable, except as a result of a closed isolation valve or boron concentration less than 1900 ppm, restore the inoperable accumulator to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and reduce Reactor Coolant System pressure to less than 1000 psig within the following 6 hours.

b. With one accumulator inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in at least HOT STANDBY within 6 hours and reduce Reactor Coolant System pressure to less than 1000 psig within the following 6 hours.

c. With one accumulator inoperable due to boron concentration less than 1900 ppm and:

1) The volume weighted average boron concentration of the accumulators 1900 ppm or greater, restore the inoperable accumulator to OPERABLE status within 24 hours of the low boron determination or be in at least HOT STANDBY within the next 6 hours and reduce Reactor Coolant System pressure to less than 1000 psig within the following 6 hours.

2) The volume weighted average boron concentration of the accumulators less than 1900 ppm but greater than 1800 ppm, restore the inoperable accumulator to OPERABLE status or return the volume weighted average boron concentration of the three limiting accumulators to greater than 1900 ppm and enter ACTION c.1 within 6 hours of the low boron determination or be in HOT STANDBY within the next 6 hours and reduce Reactor Coolant System pressure to less than 1000 psig within the following 6 hours.

*Reactor Coolant System pressure above 1000 psig.

UNIT 2 ONLY

3/4.5 EMERGENCY CORE COOLING SYSTEMS

3/4.5.1 ACCUMULATORS

COLD LEG INJECTION

LIMITING CONDITION FOR OPERATION

3.5.1.1 Each cold leg injection accumulator shall be OPERABLE with:

a. The isolation valve open,

b. A contained borated water volume of between 6870 and 7342 gallons,

c. A boron concentration of between ~~1900~~ 2000 and ~~2100~~ 2275 ppm,

d. A nitrogen cover-pressure of between 585 and 639 psig, and

e. A water level and pressure channel OPERABLE.

APPLICABILITY: MODES 1, 2, and 3*.

ACTION:

a. With one accumulator inoperable, except as a result of a closed isolation valve or boron concentration less than ~~1900~~ 2000 ppm, restore the inoperable accumulator to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and reduce Reactor Coolant System pressure to less than 1000 psig within the following 6 hours.

b. With one accumulator inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in at least HOT STANDBY within 6 hours and reduce Reactor Coolant System pressure to less than 1000 psig within the following 6 hours.

c. With one accumulator inoperable due to boron concentration less than 2000 ~~1900~~ ppm and:

1) The volume weighted average boron concentration of the accumulators ~~1900~~ 2000 ppm or greater, restore the inoperable accumulator to OPERABLE status within 24 hours of the low boron determination or be in at least HOT STANDBY within the next 6 hours and reduce Reactor Coolant System pressure to less than 1000 psig within the following 6 hours.

2) The volume weighted average boron concentration of the accumulators less than ~~1900~~ 2000 ppm but greater than ~~1000~~ 1900 ppm, restore the inoperable accumulator to OPERABLE status or return the volume weighted average boron concentration of the three limiting accumulators to greater than ~~1900~~ 2000 ppm and enter ACTION c.1 within 6 hours of the low boron determination or be in HOT STANDBY within the next 6 hours and reduce Reactor Coolant System pressure to less than 1000 psig within the following 6 hours.

*Reactor Coolant System pressure above 1000 psig.

EMERGENCY CORE COOLING SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

3) The volume weighted average boron concentration of the accumulators 1800 ppm or less, return the volume weighted average boron concentration of the three limiting accumulator to greater than 1800 ppm and enter ACTION c.2 within 1 hour of the low boron determination or be in HOT STANDBY within the next 6 hours and reduce Reactor Coolant System pressure to less than 1000 psig within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.5.1.1.1 Each cold leg injection accumulator shall be demonstrated OPERABLE:

a. At least once per 12 hours by:

1) Verifying the contained borated water volume and nitrogen cover-pressure in the tanks, and

2) Verifying that each cold leg injection accumulator isolation valve is open.

b. At least once per 31 days and within 6 hours after each solution volume increase of greater than or equal to 1% of tank volume not resulting from normal makeup 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; and

d. At least once per 18 months by verifying proper operation of the power disconnect circuit.

4.5.1.1.2 Each cold leg injection accumulator water level and pressure channel shall be demonstrated OPERABLE:

a. At least once per 31 days by the performance of an ANALOG CHANNEL OPERATIONAL TEST, and

b. At least once per 18 months by the performance of a CHANNEL CALIBRATION.

LIMITING CONDITION FOR OPERATION (Continued)

3) The volume weighted average boron concentration of the accumulators ~~1800~~ 1900 ppm or less, return the volume weighted average boron concentration of the three limiting accumulator to greater than ~~1800~~ 1900 ppm and enter ACTION c.2 within 1 hour of the low boron determination or be in HOT STANDBY within the next 6 hours and reduce Reactor Coolant System pressure to less than 1000 psig within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.5.1.1.1 Each cold leg injection accumulator shall be demonstrated OPERABLE:

a. At least once per 12 hours by:

1) Verifying the contained borated water volume and nitrogen cover-pressure in the tanks, and

2) Verifying that each cold leg injection accumulator isolation valve is open.

b. At least once per 31 days and within 6 hours after each solution volume increase of greater than or equal to 1% of tank volume not resulting from normal makeup 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; and

d. At least once per 18 months by verifying proper operation of the power disconnect circuit.

4.5.1.1.2 Each cold leg injection accumulator water level and pressure channel shall be demonstrated OPERABLE:

a. At least once per 31 days by the performance of an ANALOG CHANNEL OPERATIONAL TEST, and

b. At least once per 18 months by the performance of a CHANNEL CALIBRATION.

Pages 3/4 5-2a and 3/4 5-2b intentionally deleted.

EMERGENCY CORE COOLING SYSTEMS

3/4.5.5 REFUELING WATER STORAGE TANK

LIMITING CONDITION FOR OPERATION

3.5.5 The refueling water storage tank (RWST) shall be OPERABLE with:

a. A contained borated water volume of at least 372,100 gallons,

b. A boron concentration of between 2000 and ~~2100~~ 2275 ppm of boron,

c. A minimum solution temperature of 70°F, and

d. A maximum solution temperature of 100°F.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With the RWST inoperable, restore the tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.5 The RWST shall be demonstrated OPERABLE:

a. At least once per 7 days by:

1) Verifying the contained borated water volume in the tank, and

2) Verifying the boron concentration of the water.

b. At least once per 24 hours by verifying the RWST temperature when the outside air temperature is either less than 70°F or greater than 100°F.

EMERGENCY CORE COOLING SYSTEMS

3/4.5.5 REFUELING WATER STORAGE TANK

LIMITING CONDITION FOR OPERATION

3.5.5 The refueling water storage tank (RWST) shall be OPERABLE with:

a. A contained borated water volume of at least 372,100 gallons,

b. A boron concentration of between ~~2000~~ 2175 and ~~2100~~ 2275 ppm of boron,

c. A minimum solution temperature of 70°F, and

d. A maximum solution temperature of 100°F.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With the RWST inoperable, restore the tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.5 The RWST shall be demonstrated OPERABLE:

a. At least once per 7 days by:

1) Verifying the contained borated water volume in the tank, and

2) Verifying the boron concentration of the water.

b. At least once per 24 hours by verifying the RWST temperature when the outside air temperature is either less than 70°F or greater than 100°F.

3/4.9 REFUELING OPERATIONS

3/4.9.1 BORON CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.9.1 The boron concentration of all filled portions of the Reactor Coolant System and the refueling canal shall be maintained uniform and sufficient to ensure that the more restrictive of the following reactivity conditions is met:

a. Either a K_{eff} of 0.95 or less, or

b. A boron concentration of greater than or equal to 2000 ppm.

APPLICABILITY: MODE 6*, with the reactor vessel head closure bolts less than fully tensioned or with the head removed.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes and initiate and continue boration at greater than or equal to 30 gpm of a solution containing greater than or equal to 7000 ppm boron or its equivalent until K_{eff} is reduced to less than or equal to 0.95 or the boron concentration is restored to greater than or equal to 2000 ppm, whichever is the more restrictive.

SURVEILLANCE REQUIREMENTS

4.9.1.1 The more restrictive of the above two reactivity conditions shall be determined prior to:

a. Removing or unbolting the reactor vessel head, and

b. Withdrawal of any full length control rod in excess of 3 feet from its fully inserted position within the reactor vessel.

4.9.1.2 The boron concentration of the Reactor Coolant System and the refueling canal shall be determined by chemical analysis at least once per 72 hours.

4.9.1.3 NV-250 shall be verified closed under administrative control at least once per 72 hours; or, NV-131, NV-140, NV-176, NV-468, NV-808, and either NV-132 or NV-1026 shall be verified closed under administrative control at least once per 12 hours when necessary to makeup to the RWST during refueling operations.

*The reactor shall be maintained in MODE 6 whenever fuel is in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

UNIT 2 ONLY

3/4.9 REFUELING OPERATIONS

3/4.9.1 BORON CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.9.1 The boron concentration of all filled portions of the Reactor Coolant System and the refueling canal shall be maintained uniform and sufficient to ensure that the more restrictive of the following reactivity conditions is met:

a. Either a K_{eff} of 0.95 or less, or

b. A boron concentration of greater than or equal to ~~2000~~ 2175 ppm.

APPLICABILITY: MODE 6*, with the reactor vessel head closure bolts less than fully tensioned or with the head removed.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes and initiate and continue boration at greater than or equal to 30 gpm of a solution containing greater than or equal to 7000 ppm boron or its equivalent until K_{eff} is reduced to less than or equal to 0.95 or the boron concentration is restored to greater than or equal to ~~2000~~ 2175 ppm, whichever is the more restrictive.

SURVEILLANCE REQUIREMENTS

4.9.1.1 The more restrictive of the above two reactivity conditions shall be determined prior to:

a. Removing or unbolting the reactor vessel head, and

b. Withdrawal of any full length control rod in excess of 3 feet from its fully inserted position within the reactor vessel.

4.9.1.2 The boron concentration of the Reactor Coolant System and the refueling canal shall be determined by chemical analysis at least once per 72 hours.

4.9.1.3 NV-250 shall be verified closed under administrative control at least once per 72 hours; or, NV-131, NV-140, NV-176, NV-468, NV-808, and either NV-132 or NV-1026 shall be verified closed under administrative control at least once per 12 hours when necessary to makeup to the RWST during refueling operations.

*The reactor shall be maintained in MODE 6 whenever fuel is in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

UNIT 1 ONLY

3/4.9.12 FUEL STORAGE - SPENT FUEL STORAGE POOL

LIMITING CONDITION FOR OPERATION

3.9.12 Fuel is to be stored in the spent storage pool with:

a. The boron concentration in the spent fuel pool maintained at greater than or equal to 2000 ppm; and

b. Storage in Region 2 restricted to irradiated fuel which has decayed at least 16 days and one of the following:

   1) fuel which has been qualified in accordance with Table 3.9-1; or

   2) Fuel which has been qualified by means of an analysis using NRC approved methodology to assure with a 95 percent probability at a 95 percent confidence level that k_{eff} is no greater than 0.95 including all uncertainties; or

   3) Unqualified fuel stored in a checkerboard configuration. In the event checkerboard storage is used, one row between normal storage locations and checkerboard storage locations will be vacant.

APPLICABILITY:

During storage of fuel in the spent fuel pool.

ACTION:

a. Suspend all actions involving the movement of fuel in the spent fuel pool if it is determined a fuel assembly has been placed in the incorrect Region until such time as the correct storage location is determined. Move the assembly to its correct location before resumption of any other fuel movement.

b. Suspend all actions involving the movement of fuel in the spent fuel pool if it is determined the pool boron concentration is less than 2000 ppm, until such time as the boron concentration is increased to 2000 ppm or greater.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12a. Verify all fuel assemblies to be placed in Region 2 of the spent fuel pool are within the enrichment and burnup limits of Table 3.9-1 or that $k_{eff} \leq 0.95$ by checking the assemblies' design and burnup documentation or the assemblies' qualifying analysis documentation respectively.

b. Verify at least once per 31 days that the spent fuel pool boron concentration is greater than 2000 ppm.

UNIT 2 ONLY

3/4.9.12 FUEL STORAGE - SPENT FUEL STORAGE POOL

LIMITING CONDITION FOR OPERATION

3.9.12 Fuel is to be stored in the spent storage pool with:

a. The boron concentration in the spent fuel pool maintained at greater than or equal to ~~2000~~ 2175 ppm; and

b. Storage in Region 2 restricted to irradiated fuel which has decayed at least 16 days and one of the following:

1) fuel which has been qualified in accordance with Table 3.9-1; or

2) Fuel which has been qualified by means of an analysis using NRC approved methodology to assure with a 95 percent probability at a 95 percent confidence level that k_{eff} is no greater than 0.95 including all uncertainties; or

3) Unqualified fuel stored in a checkerboard configuration. In the event checkerboard storage is used, one row between normal storage locations and checkerboard storage locations will be vacant.

APPLICABILITY:

During storage of fuel in the spent fuel pool.

ACTION:

a. Suspend all actions involving the movement of fuel in the spent fuel pool if it is determined a fuel assembly has been placed in the incorrect Region until such time as the correct storage location is determined. Move the assembly to its correct location before resumption of any other fuel movement.

b. Suspend all actions involving the movement of fuel in the spent fuel pool if it is determined the pool boron concentration is less than ~~2000~~ 2175 ppm, until such time as the boron concentration is increased to ~~2000~~ 2175 ppm or greater.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12a. Verify all fuel assemblies to be placed in Region 2 of the spent fuel pool are within the enrichment and burnup limits of Table 3.9-1 or that $k_{eff} \leq 0.95$ by checking the assemblies' design and burnup documentation or the assemblies' qualifying analysis documentation respectively.

b. Verify at least once per 31 days that the spent fuel pool boron concentration is greater than ~~2000~~ 2175 ppm.

MODERATOR TEMPERATURE COEFFICIENT (Continued)

The Surveillance Requirements for measurement of the MTC at the beginning and near the end of the fuel cycle are adequate to confirm that the MTC remains within its limits since this coefficient changes slowly due principally to the reduction in RCS boron concentration associated with fuel burnup.

3/4.1.1.4 MINIMUM TEMPERATURE FOR CRITICALITY

This specification ensures that the reactor will not be made critical with the Reactor Coolant System average temperature less than 551°F. This limitation is required to ensure: (1) the moderator temperature coefficient is within it analyzed temperature range, (2) the trip instrumentation is within its normal operating range, (3) the pressurizer is capable of being in an OPERABLE status with a steam bubble, and (4) the reactor vessel is above its minimum RT_{NDT} temperature.

3/4.1.2 BORATION SYSTEMS

The Boron Injection System ensures that negative reactivity control is available during each mode of facility operation. The components required to perform this function include: (1) borated water sources, (2) charging pumps, (3) separate flow paths, (4) boric acid transfer pumps, (5) associated Heat Tracing Systems, and (6) an emergency power supply from OPERABLE diesel generators.

With the RCS average temperature above 200°F, a minimum of two boron injection flow paths are required to ensure single functional capability in the event an assumed failure renders one of the flow paths inoperable. The boration capability of either flow path is sufficient to provide a SHUTDOWN MARGIN from expected operating conditions of 1.3% 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 16,321 gallons of 7000-ppm borated water from the boric acid storage tanks or 75,000 gallons of 2000-ppm borated water from the refueling water storage tank (RWST).

With the RCS temperature below 200°F, one Boron 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 Boron 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 300°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

UNIT 2 ONLY

MODERATOR TEMPERATURE COEFFICIENT (Continued)

The Surveillance Requirements for measurement of the MTC at the beginning and near the end of the fuel cycle are adequate to confirm that the MTC remains within its limits since this coefficient changes slowly due principally to the reduction in RCS boron concentration associated with fuel burnup.

3/4.1.1.4 MINIMUM TEMPERATURE FOR CRITICALITY

This specification ensures that the reactor will not be made critical with the Reactor Coolant System average temperature less than 551°F. This limitation is required to ensure: (1) the moderator temperature coefficient is within it analyzed temperature range, (2) the trip instrumentation is within its normal operating range, (3) the pressurizer is capable of being in an OPERABLE status with a steam bubble, and (4) the reactor vessel is above its minimum RT_{NDT} temperature.

3/4.1.2 BORATION SYSTEMS

The Boron Injection System ensures that negative reactivity control is available during each mode of facility operation. The components required to perform this function include: (1) borated water sources, (2) charging pumps, (3) separate flow paths, (4) boric acid transfer pumps, (5) associated Heat Tracing Systems, and (6) an emergency power supply from OPERABLE diesel generators.

With the RCS average temperature above 200°F, a minimum of two boron injection flow paths are required to ensure single functional capability in the event an assumed failure renders one of the flow paths inoperable. The boration capability of either flow path is sufficient to provide a SHUTDOWN MARGIN from expected operating conditions of 1.3% 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 16,321 gallons of 7000-ppm borated water from the boric acid storage tanks or 75,000 gallons of ~~2000~~ 2175-ppm borated water from the refueling water storage tank (RWST).

With the RCS temperature below 200°F, one Boron 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 Boron 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 300°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

UNIT 1 ONLY

BORATION SYSTEMS (Continued)

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 2000 gallons of 7000-ppm borated water from the boric acid storage tanks or 10,000 gallons of 2000-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~~ 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) the potential effects of rod misalignment on associated accident analyses are limited. 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 control rod insertion limit and shutdown rod insertion limits are specified in the CORE OPERATING LIMITS REPORT per specification 6.9.1.9.

The ACTION statements which permit limited variations from the basic requirements are accompanied by additional restrictions which ensure that the original design criteria are met. Misalignment of a rod requires measurement of peaking factors and a restriction in THERMAL POWER. These restrictions provide assurance of fuel rod integrity during continued operation. In addition, those safety analyses affected by a misaligned rod are reevaluated to confirm that the results remain valid during future operation.

The maximum rod drop time restriction is consistent with the assumed rod drop time used in the safety analyses. Measurement with T_{avg} greater than or equal to 551°F and with all reactor coolant pumps operating ensures that the measured drop times will be representative of insertion times experienced during a Reactor trip at operating conditions.

Control rod positions and OPERABILITY of the rod position indicators are required to be verified on a nominal basis of once per 12 hours with more frequent verifications required if an automatic monitoring channel is inoperable. These verification frequencies are adequate for assuring that the applicable LCO's are satisfied.

BORATION SYSTEMS (Continued)

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 2000 gallons of 7000-ppm borated water from the boric acid storage tanks or 10,000 gallons of ~~2000~~ 2175 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~~ 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.

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The specifications of this section ensure that: (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) the potential effects of rod misalignment on associated accident analyses are limited. 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 control rod insertion limit and shutdown rod insertion limits are specified in the CORE OPERATING LIMITS REPORT per specification 6.9.1.9.

The ACTION statements which permit limited variations from the basic requirements are accompanied by additional restrictions which ensure that the original design criteria are met. Misalignment of a rod requires measurement of peaking factors and a restriction in THERMAL POWER. These restrictions provide assurance of fuel rod integrity during continued operation. In addition, those safety analyses affected by a misaligned rod are reevaluated to confirm that the results remain valid during future operation.

The maximum rod drop time restriction is consistent with the assumed rod drop time used in the safety analyses. Measurement with T_{avg} greater than or equal to 551°F and with all reactor coolant pumps operating ensures that the measured drop times will be representative of insertion times experienced during a Reactor trip at operating conditions.

Control rod positions and OPERABILITY of the rod position indicators are required to be verified on a nominal basis of once per 12 hours with more frequent verifications required if an automatic monitoring channel is inoperable. These verification frequencies are adequate for assuring that the applicable LCO's are satisfied.

MOVABLE CONTROL ASSEMBLIES (Continued)

For Specification 3.1.3.1 ACTIONS c. and d., it is incumbent upon the plant personnel to verify the trippability of the inoperable control rod(s). This may be by verification of a control system failure, usually electrical in nature, or that the failure is associated with the control rod stepping mechanism.

During performance of the Control Rod Movement periodic test (Specification 4.1.3.1.2), there have been some "Control Malfunctions" that prohibited a control rod bank or group from moving when selected, as evidenced by the demand counters and DRPI*. In all cases, when the control malfunctions were corrected, the rods moved freely (no excessive friction or mechanical interference) and were trippable.

This surveillance test is an indirect method of verifying the control rods are not immovable or untrippable. It is highly unlikely that a complete control rod bank or bank group is immovable or untrippable. Past surveillance and operating history provide evidence of "trippability."

Based on the above information, during performance of the rod movement test, if a complete control rod bank or group fails to move when selected and can be attributed to a "Control Malfunction," the control rods can be considered "Operable" and plant operation may continue while ACTIONS c. and d. are taken.

If one or more control rods fail to move during testing (not a complete bank or group and cannot be contributed to a "Control Malfunction"), the affected control rod(s) shall be declared "Inoperable" and ACTION a. taken.

(Reference: W letter dated December 21, 1984, NS-NRC-84-2990, E. P. Rahe to Dr. C. O. Thomas)

*Digital Rod Position Indicators

3/4.5 EMERGENCY CORE COOLING SYSTEMS

BASES

3/4.5.1 ACCUMULATORS

The OPERABILITY of each Reactor Coolant System (RCS) Cold Leg Accumulator ensures that a sufficient volume of borated water will be immediately forced into the reactor core through each of the cold legs in the event the RCS pressure falls below the pressure of the accumulators. This initial surge of water into the core provides the initial cooling mechanism during large RCS pipe ruptures.

The limits on accumulator volume, boron concentration and pressure ensure that the assumptions used for accumulator injection in the safety analysis are met.

The allowed down time for the accumulators are variable based upon boron concentration to ensure that the reactor is shutdown following a LOCA and that any problems are corrected in a timely manner. Subcriticality is assured when boron concentration is above ~~1500~~ ppm, so additional down time is allowed when concentration is above ~~1500~~ 1800 ppm. A concentration of less than 1900 ppm in any single accumulator or as a volume weighted average may be indicative of a problem, such as valve leakage, but since reactor shutdown is assured, additional time is allowed to restore boron concentration in the accumulators.

The accumulator power operated isolation valves are considered to be "operating bypasses" in the context of IEEE Std. 279-1971, which requires that bypasses of a protective function be removed automatically whenever permissive conditions are not met. In addition, as these accumulator isolation valves fail to meet single failure criteria, removal of power to the valves is required.

The limits for operation with an accumulator inoperable for any reason except an isolation valve closed minimizes the time exposure of the plant to a LOCA event occurring concurrent with failure of an additional accumulator which may result in unacceptable peak cladding temperatures. If a closed isolation valve cannot be immediately opened, the full capability of one accumulator is not available and prompt action is required to place the reactor in a mode where this capability is not required.

The original licensing bases of McGuire assumes both the UHI system and the Cold Leg Accumulators function to mitigate postulated accidents. Subsequent analyses, documented in "McGuire Nuclear Station, Safety Analysis for UHI Elimination" dated September 1985, and docketed by Duke letter dated October 2, 1985, support the determination that UHI is no longer required provided the Cold Leg Accumulator volume is adjusted to be consistent with that assumed in the Safety Analysis.

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NO CHANGES THIS PAGE.
FOR INFORMATION ONLY.

3/4.5.2 and 3/4.5.3 ECCS SUBSYSTEMS

The OPERABILITY of two independent ECCS subsystems ensures that sufficient emergency core cooling capability will be available in the event of a LOCA assuming the loss of one subsystem through any single failure consideration. Either subsystem operating in conjunction with the accumulators is capable of supplying sufficient core cooling to limit the peak cladding temperatures within acceptable limits for all postulated break sizes ranging from the double ended break of the largest RCS cold leg pipe downward. In addition, each ECCS subsystem provides long-term core cooling capability in the recirculation mode during the accident recovery period.

With the RCS temperature below 350°F, one OPERABLE ECCS subsystem is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the limited core cooling requirements.

The limitation for a maximum of one centrifugal charging pump and one Safety Injection pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps and Safety Injection pumps except the required OPERABLE charging pump to be inoperable below 300°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained. Surveillance Requirements for throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

3/4.5.4

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3/4.5.5 REFUELING WATER STORAGE TANK

The OPERABILITY of the refueling water storage tank (RWST) as part of the ECCS ensures that a sufficient supply of borated water is available for injection by the ECCS in the event of a LOCA. The limits on RWST minimum volume and boron concentration ensure that: (1) sufficient water is available within containment to permit recirculation cooling flow to the core, and (2) the reactor will remain subcritical in the cold condition following mixing of the RWST and the RCS water volumes with all control rods inserted except

REFUELING WATER STORAGE TANK (Continued)

for the most reactive control assembly. These assumptions are consistent with the LOCA analyses.

The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics.

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between ~~8.5~~ 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.

3/4.9.1 BORON CONCENTRATION

The limitations on reactivity conditions during REFUELING ensure that: (1) the reactor will remain subcritical during CORE ALTERATIONS, and (2) a uniform boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. These limitations are consistent with the initial conditions assumed for the boron dilution incident in the accident analyses. The value of 0.95 or less for K_{eff} includes a 1% delta k/k conservative allowance for uncertainties. Similarly, the boron concentration value of 2000 ppm or greater includes a conservative uncertainty allowance of 50 ppm boron.

The Reactor Makeup Water Supply to the Chemical and Volume Control (NV) System is normally isolated during refueling to prevent diluting the Reactor Coolant System boron concentration. Isolation is normally accomplished by closing valve NV-250. However, isolation may be accomplished by closing valves NV-131, NV-140, NV-176, NV-468, NV-808, and either NV-132 or NV-1026, when it is necessary to makeup water to the Refueling Water Storage Tank during refueling operations.

3/4.9.2 INSTRUMENTATION

The OPERABILITY of the Source Range Neutron Flux Monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core.

3/4.9.3 DECAY TIME

The minimum requirement for reactor subcriticality prior to movement of irradiated fuel assemblies in the reactor vessel ensures that sufficient time has elapsed to allow the radioactive decay of the short-lived fission products. This decay time is consistent with the assumptions used in the accident analyses.

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

The requirements on containment building penetration closure and OPERABILITY of the Reactor Building Containment Purge Exhaust System HEPA filters and charcoal adsorbers ensure that a release of radioactive material within containment will be restricted from leakage to the environment or filtered through the HEPA filters and charcoal adsorbers prior to discharge to the atmosphere. The OPERABILITY and closure restrictions are sufficient to restrict radioactive material release from a fuel element rupture based upon the lack of containment pressurization potential while in the REFUELING MODE. Operation of the Reactor Building Containment Purge Exhaust System HEPA filters and charcoal adsorbers and the resulting iodine removal capacity are consistent with the assumptions of the accident analysis. The methyl iodide penetration test criteria for the carbon samples have been made more restrictive than required for the assumed iodine removal in the accident analysis because the humidity to be seen by the charcoal adsorbers may be greater than 70% under normal operating conditions.

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3/4.9.9 and 3/4.9.10 WATER LEVEL - REACTOR VESSEL and STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly. The minimum water depth is consistent with the assumptions of the accident analysis.

3/4.9.11 FUEL HANDLING VENTILATION EXHAUST SYSTEM

The limitations on the Fuel Handling Ventilation Exhaust System ensure that all radioactive material released from an irradiated fuel assembly will be filtered through the HEPA filters and charcoal adsorbers prior to discharge to the atmosphere. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the accident analyses. ANSI N510-1975 will be used as a procedural guide for surveillance testing. The methyl iodide penetration test criteria for the carbon samples have been made more restrictive than required for the assumed iodine removal in the accident analysis because the humidity to be seen by the charcoal adsorbers may be greater than 70% under normal operating conditions.

3/4.9.12 FUEL STORAGE - SPENT FUEL STORAGE POOL

The requirements for fuel storage in the spent fuel pool on 3.9.12 (a) and (b) ensure that: (1) the spent fuel pool will remain subcritical during fuel storage; and (2) a uniform boron concentration is maintained in the water volume in the spent fuel pool for reactivity control. The value of 0.95 or less for Keff which includes all uncertainties at the 95/95 probability/ confidence level as described in Section 9.1.2.3.1 of the FSAR is the acceptance criteria for fuel storage in the spent fuel pool. Table 3.9-1 is conservatively developed in accordance with the acceptance criteria and methodology referenced in Section 5.6 of the Technical Specifications. Storage in a checkerboard configuration in Region 2 meets all the acceptance criteria referenced in Section 5.6 of the Technical Specifications and is verified in a semi-annual basis after initial verification through administrative controls.

The Action Statement applicable to fuel storage in the spent fuel pool ensures that: (1) the spent fuel pool is protected from distortion in the fuel storage pattern that could result in a critical array during the movement of fuel; and (2) the boron concentration is maintained at 2000 ppm during all actions involving movement of fuel in the spent fuel pool.

The Surveillance Requirements applicable to fuel storage in the spent fuel pool ensure that: (1) fuel stored in Region 2 meets the enrichment and burnup limits of Table 3.9-1 or the $K_{eff} \leq 0.95$ acceptance criteria of an analysis using NRC approved methodology; and (2) the boron concentration meets the 2000 ppm limit.

3/4.9.9 and 3/4.9.10 WATER LEVEL - REACTOR VESSEL and STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly. The minimum water depth is consistent with the assumptions of the accident analysis.

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The Action Statement applicable to fuel storage in the spent fuel pool ensures that: (1) the spent fuel pool is protected from distortion in the fuel storage pattern that could result in a critical array during the movement of fuel; and (2) the boron concentration is maintained at ~~2000~~ 2175 ppm during all actions involving movement of fuel in the spent fuel pool.

The Surveillance Requirements applicable to fuel storage in the spent fuel pool ensure that: (1) fuel stored in Region 2 meets the enrichment and burnup limits of Table 3.9-1 or the $K_{eff} \leq 0.95$ acceptance criteria of an analysis using NRC approved methodology; and (2) the boron concentration meets the ~~2000~~ 2175 ppm limit.

ATTACHMENT 2

DUKE POWER COMPANY
MCGUIRE NUCLEAR STATION

TECHNICAL JUSTIFICATION

Proposed Revision to Minimum Boron Concentration Limits

It is proposed that the following minimum boron concentrations be revised beginning with McGuire Unit 2 Cycle 9 operation:

- The cold leg accumulator (CLA) minimum boron concentration limit from 1900 ppm to 2000 ppm. This limit is given in Technical Specification 3.5.1.1.c, Technical Specification 3.5.1.1 action statements a and c, and the Bases to Technical Specification 3/4.5.1. These changes are for McGuire Unit 2 only.

- The minimum volume weighted average boron concentration of the accumulators from 1800 ppm to 1900 ppm. This limit is given in Technical Specification 3.5.1.1 action items c.2 and c.3, and in the Bases to Technical Specification 3/4.5.1. These changes are for McGuire Unit 2 only.

- The minimum volume weighted average boron concentration of the accumulators from 1500 ppm to 1800 ppm. This limit is given in the Bases to Technical Specification 3/4.5.1. These changes are for McGuire Unit 1 only.

- The refueling water storage tank (RWST) minimum boron concentration limit from 2000 ppm to 2175 ppm. This limit is given in Technical Specifications 3.1.2.5.b.2, 3.1.2.6.b.2, 3.5.5.b and the Bases to specification 3/4.1.2. These changes are for McGuire Unit 2 only.

- The refueling canal minimum boron concentration limit from 2000 ppm to 2175 ppm. This limit is given in Technical Specification 3.9.1 and in the Bases to specification 3/4.9.1. These changes are for McGuire Unit 2 only.

- The spent fuel storage pool minimum boron concentration from 2000 ppm to 2175 ppm. This limit is given in Technical Specification 3/4.9.12 and the Bases to specification 3/4.9.12. These changes are for McGuire Unit 2 only

Technical Justification

The CLA and RWST minimum boron concentrations of 2000 ppm and 2175 ppm, respectively, are necessary to support the safe operation of McGuire Unit 2 Cycle 9 and subsequent cycles. The proposed CLA minimum boron concentration limit increase of 100 ppm (versus a 175 ppm increase for the RWST minimum boron concentration limit) is required to prevent unnecessary boron concentration changes in the CLAs. The boron concentrations in the CLAs and the RWST are designed to ensure long term subcriticality following a LOCA. The increases in the RWST and CLA minimum boron concentrations are required to offset 1) the additional reactivity needed to meet the energy requirements of longer cycle lengths, and 2) the increased positive reactivity inserted following the cooldown of a core with a higher percentage of B&W MkBW fuel. MkBW fuel has a larger rod diameter than Westinghouse OFA fuel, resulting in a smaller water to uranium ratio, and thus a generally more negative moderator temperature coefficient (MTC). The more negative MTC causes more positive reactivity feedback following a LOCA, where relatively cool ECCS/containment sump water is recirculated through the reactor coolant system. Reference 1 provides a discussion of the methodologies employed to ensure the requirements of the post-LOCA subcriticality analysis are satisfied on a cycle specific basis.

Calculating the volumetric average boron concentration based on all four cold leg accumulators is valid, since, regardless of the break location, the contents of each accumulator will be emptied (either directly or indirectly) into the containment sump. A volumetric average concentration of 1900 ppm will ensure long-term subcriticality following a LOCA for McGuire Unit 2.

The changes from 1500 to 1800 in the Bases for Specification 3/4.5.1 should have been performed in the McGuire Unit 1 Cycle 8 and McGuire Unit 2 Cycle 8 reload submittals (References 2 and 3), but were inadvertently left out. This change was correctly made and approved in the Catawba Unit 1 Cycle 7 reload submittal (Reference 4). A volumetric average concentration of 1800 ppm will ensure long term subcriticality following a LOCA for McGuire Unit 1. As stated above, the correct Cycle 8 value for Unit 2 is also 1800 ppm. Since Cycle 9 requires a higher value, the concentration in the bases is being made directly from 1500 ppm to 1900 ppm.

The changes to the refueling canal and spent fuel storage pool minimum boron concentration limits are intended to be consistent with the proposed change to the RWST minimum boron concentration limit. During refueling, the water in the refueling canal and the spent fuel storage pool can be mixed during fuel transfer. Raising the refueling canal and spent fuel storage pool minimum boron concentration limits to the RWST minimum boron concentration requirement will prevent the RWST boron concentration from getting out of specification upon post refueling refill.

Proposed Revision to Maximum Boron Concentration Limits

It is proposed that the following maximum boron concentrations and minimum post-LOCA containment sump pH limits be revised beginning with McGuire Unit 2 Cycle 9 operation:

- The cold leg accumulator (CLA) maximum boron concentration limit from 2100 ppm to 2275 ppm. This limit is given in Technical Specification 3.5.1.1.c.

- The refueling water storage tank (RWST) maximum boron concentration limit from 2100 ppm to 2275 ppm. This limit is given in Technical Specifications 3.1.2.6 and 3.5.5.b.

- The allowable values for post-LOCA containment sump pH are from 8.5 to 10.5, as given in the Bases to Technical Specifications 3/4.1.2 and 3/4.5.5. It is proposed that the allowable minimum value be decreased from 8.5 to 7.5 beginning with McGuire Unit 2 Cycle 9 operation.

The above requested Technical Specification changes are for McGuire Units 1 and 2.

Technical Justification

The increases in CLA and RWST maximum boron concentration limits are necessary to provide adequate operating space given the proposed increases in the CLA and RWST minimum boron concentration limits for McGuire Unit 2. Increasing the RWST upper boron concentration limit to 2275 maintains the existing operating margin of 100 ppm. Increasing the CLA upper boron concentration limit to 2275 keeps the RWST and CLA limits the same so that makeup from the RWST to the CLAs will not put the CLAs out of specification. Increasing the RWST and CLA upper boron concentration limits for both units, although not required for Unit 1, will minimize the Technical Specification differences between the units. The maximum boron concentration limits are evaluated to ensure boron precipitation is precluded following a LOCA. Reference 1 provides a discussion of the methodology employed to ensure the requirements of the boron precipitation analysis are satisfied on a cycle specific basis.

With the proposed increases in the RWST and CLA boron concentration limits, it is necessary to revise the minimum allowable value for post-LOCA containment sump pH. The RWST and CLAs contain boric acid, which when increased in concentration, will lower the minimum post-LOCA mixed containment sump pH to less than 8.5. A minimum sump pH limit of 7.5 is acceptable, and is supported by the discussion presented in Reference 1.

REFERENCES

1. Letter from M. S. Tuckman (Duke Power) to USNRC, "Catawba Nuclear Station, Docket Nos. 50-413 and 50-414, McGuire Nuclear Station, Docket Nos. 50-369 and 50-370, Technical Specification Amendment, Relocation of Cycle-Specific Parameter Limits," January 13, 1993.

2. Letter from M. S. Tuckman (Duke Power) to USNRC, "McGuire Nuclear Station, Unit 1, Docket Number 50-369, Cycle 8 Reload Submittal," June 26, 1991.

3. Letter from T. C. McMeekin (Duke Power) to USNRC, "McGuire Nuclear Station, Unit 2, Docket Number 50-370, Cycle 8 Reload Submittal," December 18, 1991.

4. Letter from M. S. Tuckman (Duke Power) to USNRC, "Catawba Nuclear Station, Dockets Nos. 50-413 and 50-414, Supplement to Technical Specification Amendment, Catawba Unit 1, Cycle 7 Reload," August 26, 1992.