Docket File
50-424/425

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 5, 1995

Mr. C. K. McCoy
Vice President - Nuclear
Vogtle Project
Georgia Power Company
P. O. Box 1295
Birmingham, AL 35201

SUBJECT: ISSUANCE OF AMENDMENTS - VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2 - ELIMINATION OF CONTAINMENT SPARY ADDITIVE SYSTEM (TAC NOS. M90454 AND M90455)

Dear Mr. McCoy:

The Nuclear Regulatory Commission has issued the enclosed Amendment Nos. 77 and 78 to Facility Operating License NPF-68 and Amendment Nos. 56 and 57 to Facility Operating License NPF-81 for the Vogtle Electric Generating Plant, Units 1 and 2. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated September 13, 1994, as supplemented by your letter dated December 6, 1994.

The amendments replace Containment Systems TS 3.6.2.2 for the Spray Additive System, with a new Emergency Core Cooling System (ECCS) TS 3.5.5 for the ECCS Recirculation Fluid pH Control System.

Please note that the attached amendments are effective as of the date of issuance. However, in accordance with your schedule for performing the related plant modifications, the implementation dates are not the same. You have planned the modifications for Unit 2 (Phase I) to be performed during the Unit 2 Cycle 4 refueling (2R4) outage scheduled to begin in February 1995, and the planned modifications for Unit 1 (Phase II) to be performed during the Unit 1 Cycle 6 refueling (1R6) outage scheduled for the spring of 1996. However, since the TS pages are common for both Units 1 and 2, both licenses will be affected by each unit's changes. Therefore, the licenses for Units 1 and 2 will be amended to specify implementation of Phases I and II in separate amendments. Please be aware, however, that any future amendments affecting the TS pages changed under Phase II will require appropriate updating of these TS pages if NRC approval is requested prior to implementation of Phase II.

DF01

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly Federal Register notice. You are requested to notify the NRC in writing when these amendments have been implemented at Vogtle Units 1 and 2.

Sincerely,

ORIGINAL SIGNED BY:

Louis L. Wheeler, Senior Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-424 and 50-425

Enclosures:
1. Amendment Nos. 77 and 78 to NPF-68
2. Amendment Nos. 56 and 57 to NPF-81
3. Safety Evaluation

cc w/enclosures:
See next page

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A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly Federal Register notice. You are requested to notify the NRC in writing when these amendments have been implemented at Vogtle Units 1 and 2.

Sincerely,

Louis L. Wheeler, Senior Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-424 and 50-425

Enclosures:
1. Amendment Nos. 77 and 78 to NPF-68
2. Amendment Nos. 56 and 57 to NPF-81
3. Safety Evaluation

cc w/enclosures:
See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA

CITY OF DALTON, GEORGIA

VOGTLE ELECTRIC GENERATING PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 77
License No. NPF-68

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the Vogtle Electric Generating Plant, Unit 1 (the facility), Facility Operating License No. NPF-68 filed by the Georgia Power Company, acting for itself, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia (the licensees), dated September 13, 1994, as supplemented by letter dated December 6, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-68 is hereby amended to read as follows:

Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 77 , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. GPC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented following the Unit 2 Cycle 4 refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION

Herbert N. Berkow, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: January 5, 1995

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA

CITY OF DALTON, GEORGIA

VOGTLE ELECTRIC GENERATING PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 56
License No. NPF-81

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the Vogtle Electric Generating Plant, Unit 2 (the facility), Facility Operating License No. NPF-81 filed by the Georgia Power Company, acting for itself, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia (the licensees), dated September 13, 1994, as supplemented by letter dated December 6, 1994, complies with the standards and requirements of the Atomic complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-81 is hereby amended to read as follows:

Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 56 , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. GPC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented following the Unit 2 Cycle 4 refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION

Herbert N. Berkow, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: January 5, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 77

FACILITY OPERATING LICENSE NO. NPF-68

DOCKET NO. 50-424

AND

TO LICENSE AMENDMENT NO. 56

FACILITY OPERATING LICENSE NO. NPF-81

DOCKET NO. 50-425

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change.

	Remove Pages	Insert Pages
Phase I (following Unit 2 Cycle 4)	VIII	VIII
	---	3/4 5-11
	3/4 6-14	3/4 6-14
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EMERGENCY CORE COOLING SYSTEMS

3/4.5.5 ECCS RECIRCULATION FLUID pH CONTROL SYSTEM

LIMITING CONDITION FOR OPERATION

3.5.5 The recirculation fluid pH control system shall be OPERABLE with a total of between 11,484 pounds (220 cubic feet) and 14,612 pounds (260 cubic feet) of trisodium phosphate crystals ($Na_3PO_4 \cdot 12H_2O \cdot \frac{1}{4}NaOH$) available in the storage baskets in the containment building.

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

ACTION: With the recirculating 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 recirculating fluid pH control system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.5 During each refueling outage the recirculating solution pH control system shall be demonstrated OPERABLE by verifying that the:

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

b. have maintained their integrity, and

c. are filled with a total of between 11,484 pounds (220 cubic feet) and 14,612 pounds (260 cubic feet) of trisodium phosphate crystals ($Na_3PO_4 \cdot 12H_2O \cdot \frac{1}{4}NaOH$).

CONTAINMENT SYSTEMS

SPRAY ADDITIVE SYSTEM

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 3700 (89.9%) and 4000 (97.2%) gallons (LI-0931A, LI-09318) of between 30 and 32% by weight NaOH solution, and

b. Two spray additive eductors each capable of adding NaOH solution from the spray 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 containment spray actuation test signal; and

d. At least once per 5 years by verifying each eductor suction flow rate (to be determined during preoperational tests) by isolating the spray additive tank, opening the valves in the miniflow lines, and the valve in the eductor test line, and running the respective pump:

1) Train A 130 ± 30 gpm

2) Train B 120 ± 30 gpm

TABLE 3.8-1 (Continued)

SAFETY-RELATED
MOTOR-OPERATED VALVES THERMAL OVERLOAD
PROTECTION BYPASS DEVICES

VALVE NUMBER	FUNCTION
1/2HV-8105; 8106	Chg Pump to RCS Isolation
1/2HV-8807A, B; 8924	HHSI Suction to Chg/SI Suction
1/2HV-8801A, B	BIT Discharge
1/2HV-8808A, B, C, D	Accumulator Discharge
1/2HV-8811A, B	Containment Emergency Sump Isolation
1/2HV-8812A, B	RHR Suction from RWST
1/2HV-8809A, B	RHR Discharge Header
1/2HV-8804A	RHR Hx No. 1 Outlet to Charge Pump
1/2HV-8804B	RHR Hx No. 2 Outlet to SI Pumps
1/2HV-8806	RWST Discharge Header to SI Pumps
1/2HV-8923A, B	SI Pump Suction Isolation
1/2HV-8813; 8814	SI Pump Miniflow
1/2HV-8821A, B	SI Pump Crosschannel
1/2HV-8835	SI Pump Discharge to Cold Legs
1/2HV-8840	RHR Pump Discharge to Hot Legs
1/2HV-8802A, B	SI Pump Discharge Header
1/2HV-8701A, B; 8702A, B	RHR Suction from RCS Hot Legs 1, 4
1/2FV-0610; 0611	RHR Miniflow
1/2HV-8716A, B	RHR Cross Connect
1/2HV-9002A, B	Spray Pump Containment Emergency Sump Isolation
1/2HV-9003A, B	Spray Pump Containment Emergency Sump Isolation
1/2HV-9017A, B	Spray Pump Suction from RWST
1/2HV-9001A, B	Spray Pump Discharge Header
1HV-8994A, B	Spray Additive Tank Discharge **(Unit 1 only)**
1/2HV-11600	NSCW Pump Discharge Isolation
1/2HV-11605	NSCW Pump Discharge Isolation
1/2HV-11606	NSCW Pump Discharge Isolation
1/2HV-11607	NSCW Pump Discharge Isolation
1/2HV-11612	NSCW Pump Discharge Isolation
1/2HV-11613	NSCW Pump Discharge Isolation
1/2PV-2550A	Piping Penetration Room to Atmosphere
1/2PV-2551A	Piping Penetration Room to Atmosphere
1/2HV-3009	TDAFP Steam Supply Isolation
1/2HV-3019	TDAFP Steam Supply Isolation
1/2HV-8116	Charging Pump Discharge Boron Injection
1/2PV-15129	TDAFP Trip and Throttle Valve
1/2HV-2582A	CTB Cooling Unit A7001
1/2HV-2582B	CTB Cooling Unit A7002
1/2HV-2583A	CTB Cooling Unit A7003
1/2HV-2583B	CTB Cooling Unit A7004
1/2HV-2584A	CTB Cooling Unit A7005
1/2HV-2584B	CTB Cooling Unit A7006
1/2HV-2585A	CTB Cooling Unit A7007
1/2HV-2585B	CTB Cooling Unit A7008
1/2 HV-3548	RCS Hot Leg Sample

REFUELING WATER STORAGE TANK (Continued)

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between 8.0(Unit 1)/7.5(Unit 2) 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.

3/4.5.5 ECCS RECIRCULATION FLUID pH CONTROL SYSTEM

The OPERABILITY of the ECCS recirculation fluid pH control system ensures that there is a total of between 11,484 pounds (220 cubic feet) and 14,612 pounds (260 cubic feet) of trisodium phosphate crystals ($Na_3PO_4 \cdot 12H_2O \cdot \frac{1}{4}NaOH$) available in containment to raise the pH of the recirculating solution into the range of 7.5 to 10.5. This pH range maintains iodine retention in solution and minimizes the potential for chloride induced stress corrosion cracking of austenitic stainless steel. The verification that the storage baskets contain the required amount of trisodium phosphate is accomplished by verifying that the trisodium phosphate level is between the indicated fill marks on the baskets.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA

CITY OF DALTON, GEORGIA

VOGTLE ELECTRIC GENERATING PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 78
License No. NPF-68

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the Vogtle Electric Generating Plant, Unit 1 (the facility), Facility Operating License No. NPF-68 filed by the Georgia Power Company, acting for itself, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia (the licensees), dated September 13, 1994, as supplemented by letter dated December 6, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

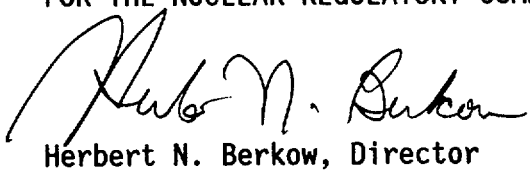
2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-68 is hereby amended to read as follows:

Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 78 , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. GPC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented following the Unit 1 Cycle 6 refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION



Herbert N. Berkow, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: January 5, 1995

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA

CITY OF DALTON, GEORGIA

VOGTLE ELECTRIC GENERATING PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 57
License No. NPF-81

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the Vogtle Electric Generating Plant, Unit 2 (the facility), Facility Operating License No. NPF-81 filed by the Georgia Power Company, acting for itself, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia (the licensees), dated September 13, 1994, as supplemented by letter dated December 6, 1994, complies with the standards and requirements of the Atomic complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-81 is hereby amended to read as follows:

Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 57 , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. GPC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented following the Unit 1 Cycle 6 refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION

Herbert N. Berkow, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: January 5, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 78

FACILITY OPERATING LICENSE NO. NPF-68

DOCKET NO. 50-424

AND

TO LICENSE AMENDMENT NO. 57

FACILITY OPERATING LICENSE NO. NPF-81

DOCKET NO. 50-425

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change.

	Remove Pages	Insert Pages
Phase II (following Unit 1 Cycle 6)	IX	IX
	3/4 5-11	3/4 5-11
	3/4 6-14	3/4 6-14
	3/4 8-24	3/4 8-24
	B 3/4 5-3	B 3/4 5-3
	B 3/4 6-3	B 3/4 6-3
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EMERGENCY CORE COOLING SYSTEMS

3/4.5.5 ECCS RECIRCULATION FLUID pH CONTROL SYSTEM

LIMITING CONDITION FOR OPERATION

3.5.5 The recirculation fluid pH control system shall be OPERABLE with a total of between 11,484 pounds (220 cubic feet) and 14,612 pounds (260 cubic feet) of trisodium phosphate crystals ($Na_3PO_4 \cdot 12H_2O \cdot \frac{1}{4}NaOH$) available in the storage baskets in the containment building.

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

ACTION: With the recirculating 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 recirculating fluid pH control system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.5 During each refueling outage the recirculating solution pH control system shall be demonstrated OPERABLE by verifying that the:

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

b. have maintained their integrity, and

c. are filled with a total of between 11,484 pounds (220 cubic feet) and 14,612 pounds (260 cubic feet) of trisodium phosphate crystals ($Na_3PO_4 \cdot 12H_2O \cdot \frac{1}{4}NaOH$).

SPRAY ADDITIVE SYSTEM

Specification 3.6.2.2 **DELETED**

TABLE 3.8-1 (Continued)

SAFETY-RELATED
MOTOR-OPERATED VALVES THERMAL OVERLOAD
PROTECTION BYPASS DEVICES

VALVE NUMBER	FUNCTION
1/2HV-8105; 8106	Chg Pump to RCS Isolation
1/2HV-8807A, B; 8924	HHSI Suction to Chg/SI Suction
1/2HV-8801A, B	BIT Discharge
1/2HV-8808A, B, C, D	Accumulator Discharge
1/2HV-8811A, B	Containment Emergency Sump Isolation
1/2HV-8812A, B	RHR Suction from RWST
1/2HV-8809A, B	RHR Discharge Header
1/2HV-8804A	RHR Hx No. 1 Outlet to Charge Pump
1/2HV-8804B	RHR Hx No. 2 Outlet to SI Pumps
1/2HV-8806	RWST Discharge Header to SI Pumps
1/2HV-8923A, B	SI Pump Suction Isolation
1/2HV-8813; 8814	SI Pump Miniflow
1/2HV-8821A, B	SI Pump Crosschannel
1/2HV-8835	SI Pump Discharge to Cold Legs
1/2HV-8840	RHR Pump Discharge to Hot Legs
1/2HV-8802A, B	SI Pump Discharge Header
1/2HV-8701A, B; 8702A, B	RHR Suction from RCS Hot Legs 1, 4
1/2FV-0610; 0611	RHR Miniflow
1/2HV-8716A, B	RHR Cross Connect
1/2HV-9002A, B	Spray Pump Containment Emergency Sump Isolation
1/2HV-9003A, B	Spray Pump Containment Emergency Sump Isolation
1/2HV-9017A, B	Spray Pump Suction from RWST
1/2HV-9001A, B	Spray Pump Discharge Header
1/2HV-11600	NSCW Pump Discharge Isolation
1/2HV-11605	NSCW Pump Discharge Isolation
1/2HV-11606	NSCW Pump Discharge Isolation
1/2HV-11607	NSCW Pump Discharge Isolation
1/2HV-11612	NSCW Pump Discharge Isolation
1/2HV-11613	NSCW Pump Discharge Isolation
1/2PV-2550A	Piping Penetration Room to Atmosphere
1/2PV-2551A	Piping Penetration Room to Atmosphere
1/2HV-3009	TDAFP Steam Supply Isolation
1/2HV-3019	TDAFP Steam Supply Isolation
1/2HV-8116	Charging Pump Discharge Boron Injection
1/2PV-15129	TDAFP Trip and Throttle Valve
1/2HV-2582A	CTB Cooling Unit A7001
1/2HV-2582B	CTB Cooling Unit A7002
1/2HV-2583A	CTB Cooling Unit A7003
1/2HV-2583B	CTB Cooling Unit A7004
1/2HV-2584A	CTB Cooling Unit A7005
1/2HV-2584B	CTB Cooling Unit A7006
1/2HV-2585A	CTB Cooling Unit A7007
1/2HV-2585B	CTB Cooling Unit A7008
1/2 HV-3548	RCS Hot Leg Sample

REFUELING WATER STORAGE TANK (Continued)

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.

3/4.5.5 ECCS RECIRCULATION FLUID pH CONTROL SYSTEM

The OPERABILITY of the ECCS recirculation fluid pH control system ensures that there is a total of between 11,484 pounds (220 cubic feet) and 14,612 pounds (260 cubic feet) of trisodium phosphate crystals ($Na_3PO_4 \cdot 12H_2O \cdot \frac{1}{4}NaOH$) available in containment to raise the pH of the recirculating solution into the range of 7.5 to 10.5. This pH range maintains iodine retention in solution and minimizes the potential for chloride induced stress corrosion cracking of austenitic stainless steel. The verification that the storage baskets contain the required amount of trisodium phosphate is accomplished by verifying that the trisodium phosphate level is between the indicated fill marks on the baskets.

CONTAINMENT VENTILATION SYSTEM (Continued)

The use of the containment purge lines is restricted to the 14-inch purge supply and exhaust isolation valves since, unlike the 24-inch valves, the 14-inch valves are capable of closing during a LOCA or steam line break accident. Therefore, the SITE BOUNDARY dose guideline of 10 CFR Part 100 would not be exceeded in the event of an accident during containment PURGING operation. Only safety-related reasons; e.g., containment pressure control or the reduction of airborne radioactivity to facilitate personnel access for surveillance and maintenance activities, should be used to justify the opening of these isolation valves.

Leakage integrity tests with a maximum allowable leakage rate for containment purge supply and exhaust supply valves will provide early indication of resilient material seal degradation and will allow opportunity for repair before gross leakage failures could develop. The 0.60 L_a leakage limit of Specification 3.6.1.2b. shall not be exceeded when the leakage rates determined by the leakage integrity tests of these valves are added to the previously determined total for all valves and penetrations subject to Type B and C tests.

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 or steam line break. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the safety analyses.

The Containment Spray System and the Containment Cooling System both provide 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

Specification 3/4.6.2.2 DELETED

PROCEDURES AND PROGRAMS (Continued)

c. The change is documented, reviewed in accordance with Specification 6.7.2 and approved by the General Manager-Nuclear Plant or department head of the responsible department within 14 days of implementation.

6.7.4 The following programs shall be established, implemented, and maintained:

a. Primary Coolant Sources Outside Containment

A program to reduce leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. The systems include the following:

1) Residual Heat Removal System
2) Containment Spray System
3) Safety Injection (excluding Boron Injection & Accumulators)
4) Chemical and Volume Control System (Letdown and Charging Pumps)
5) Post Accident Processing System
6) Gaseous Waste Processing System
7) Nuclear Sampling System (Pressurizer steam and liquid sample lines, Reactor Coolant sample lines, RHR sample lines, CVCS Demineralizer and Letdown Heat Exchanger sample lines only)

The program shall include the following:

1) Preventive maintenance and periodic visual inspection requirements, and

2) Leak test requirements for each system at refueling cycle intervals or less.

b. In-Plant Radiation Monitoring

A program which will ensure the capability to accurately determine the airborne iodine concentration in vital areas under accident conditions. This program shall include the following:

1) Training of personnel,

2) Procedures for monitoring, and

3) Provisions for maintenance of sampling and analysis equipment.

c. Secondary Water Chemistry

A program for monitoring of secondary water chemistry to inhibit steam generator tube degradation. This program shall include:

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 77 AND 78 TO FACILITY OPERATING LICENSE NPF-68

AND AMENDMENT NOS. 56 AND 57 TO FACILITY OPERATING LICENSE NPF-81

GEORGIA POWER COMPANY, ET AL.

VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2

DOCKET NOS. 50-424 AND 50-425

1.0 INTRODUCTION

By letter dated September 13, 1994, as supplemented by letter dated December 6, 1994, Georgia Power Company, et al. (the licensee) proposed license amendments to change the Technical Specifications (TS) for Vogtle Electric Generating Plant (Vogtle), Units 1 and 2. The proposed changes would replace the Containment Systems TS 3.6.2.2 for the Spray Additive System with a new Emergency Core Cooling System (ECCS) TS 3.5.5 for the ECCS Recirculation Fluid pH Control System. This action is to support a planned plant modification which would eliminate the containment spray additive system for Units 1 and 2.

The proposed plant modifications will be made in two phases. During Phase I, the Unit 2 Spray Additive System will be replaced by the ECCS Recirculation Fluid pH Control System. This is planned to be accomplished during the Unit 2 Cycle 4 refueling (2R4) outage scheduled to begin in February 1995. At that time, the TS regarding the Spray Additive System will be applicable to Unit 1 only. During Phase II, the Unit 1 Spray Additive System will be replaced by the ECCS Recirculation Fluid pH Control System. The replacement work on Unit 1 will be completed during the Unit 1 Cycle 6 refueling (1R6) outage which is scheduled to begin in the spring of 1996. The license amendments for both Units 1 and 2 are being issued at this time, with Unit 1 pH control system TS to be implemented prior to startup following the 1R6 refueling outage, and Unit 2 pH control system TS to be implemented prior to startup following the 2R4 refueling outage. The December 6, 1994, letter provided clarifying information that did not change the initial proposed no significant hazards consideration.

2.0 EVALUATION

The containment spray system (CSS) is an engineered safety features system that functions to reduce reactor containment building pressure and temperature and the quantity of airborne fission products in the containment atmosphere during the initial injection and subsequent recirculation phases after a loss

of coolant accident (LOCA). In the original design, liquid sodium hydroxide (NaOH) is added to the containment spray water to increase the pH in order to enhance absorption of the airborne fission product iodine, retain the iodine in the containment sump solution, minimize hydrogen production, and inhibit stress corrosion cracking of austenitic stainless steel components.

During the LOCA injection phase, the licensee has proposed to operate the containment spray system with a boric acid (2400 to 2600 ppm) solution from the refueling water storage tank (RWST), which has a pH of approximately 4.5. Recent results, documented in Revision 2 of the Standard Review Plan (SRP), Section 6.5.2, "Containment Spray As A Fission Product Cleanup System" addressing iodine removal, demonstrate that a low pH value would not affect the removal rate of the elemental and particulate iodine from the post-LOCA containment atmosphere.

These rates are determined by the first-order removal coefficients which, for elemental iodine removal by spray water and deposition on the containment walls, are independent of pH and therefore are not affected by elimination of the pH controlling additive. The same applies to the removal coefficients for particulate iodine which is controlled by the hydrodynamic characteristics of the spray.

During the recirculation spray phase, coolant from the sump will contain dissolved iodine removed from the containment atmosphere during the injection phase. In a radiation environment this iodine could be desorbed from the water and released to the containment atmosphere if the pH of the sump solution is too low. Since the long-term pH of the ECCS solution should be no less than 7.0, a chemical additive must be utilized to raise the pH of the solution in the containment building sump.

The licensee has proposed to control the pH above a level of 7.5 by the addition of the ECCS recirculation fluid pH control system. This is a passive system which consists of crystalline trisodium phosphate (TSP) stored in three baskets located in the containment sump area with a total minimum TSP loading of approximately 11,484 pounds (220 ft^3). The stainless steel baskets are designed to Seismic Category 1 standards and would be anchored to the filler slab at an elevation of 171 ft - 9 inches. In accordance with the proposed ECCS recirculation fluid pH control system TS, the licensee has proposed to verify during each refueling outage that the: (a) three storage baskets are in place, (b) have maintained their integrity, and (c) are filled with a total of between 11,484 pounds (220 ft^3) and 14,612 pounds (260 ft^3) of TSP.

The licensee plans to selectively leave in place or remove the components associated with the spray additive system. The blank orifice plates installed to isolate the spray additive system will meet ASME Section III Class 3 requirements. The piping and components isolated will not be maintained as ASME Section III components, however, they will be maintained as Seismic Category 1, since they remain connected to the piping downstream. The level and flow indicators and hand switches associated with these components will be removed from the main control board and replaced with cover plates.

The sump water must also be maintained in the alkaline condition in order to minimize corrosion of metallic surfaces. Chloride-induced stress corrosion cracking of austenitic stainless steel components is considerably reduced if the pH of the solution is maintained above 7. During the injection phase, the TSP will begin to dissolve and the pH of the ECCS sump solution will be raised from 4.5 into the range of 7.5 to 10.5. The surfaces sprayed during the injection will be resprayed during the recirculation phase with a high pH solution.

Control of the sump pH is also required to minimize hydrogen generation by corrosion of aluminum and zinc on galvanized surfaces and in the organic coatings on containment surfaces. The proposed change will affect the pH by introducing an initial pH of 4.5 (borated water spray) followed by a pH range of 7.5 to 10.5 using TSP. The proposed lowering of the pH for the spray will have no significant effect on the corrosion of aluminum as long as the pH remains above 4.5. The corrosion of zinc and zinc-based paints will produce hydrogen. However, the results of NRC-sponsored studies performed by Sandia National Laboratory demonstrate that with a controlled pH the corrosion rate will be low and no significant amounts of hydrogen would be produced. The operating conditions proposed by the licensee would preclude any unfavorable conditions.

TSP is being used in similar passive systems at several operating nuclear power plants. The proposed pH levels have been determined to have no significant effect on the removal of elemental and particulate iodine from the post-LOCA containment atmosphere. Also, the potential for stress corrosion and hydrogen generation has been evaluated and dismissed as credible threats to the plant components by study of the pH levels. The staff has reviewed the proposed changes and finds the proposed TS changes acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Georgia State official was notified of the proposed issuance of the amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (59 FR 53840). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: J. Zimmerman

Date: January 5, 1995