

November 30, 1995

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

Distribution  
Docket File  
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PDII-2 Reading  
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C. Miller, 0-10 D4  
G. Hill(4) T-5 C3  
C. Grimes 0-11 F23  
ACRS T-2 E26  
M. Pratt, 0-7 E4

SUBJECT: ISSUANCE OF AMENDMENTS - VOGTLE ELECTRIC GENERATING PLANT,  
UNITS 1 AND 2 (TAC NOS. M92172 AND M92173)

Dear Mr. McCoy:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 92 to Facility Operating License NPF-68 and Amendment No. 70 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 March 17, 1995, as supplemented by letter dated July 6, 1995.

The amendments revise TS 3/4.9.4, Containment Building Penetrations, to allow the personnel airlock to be open during core alterations or movement of irradiated fuel within the containment.

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.

Sincerely,

Original signed by:  
Louis L. Wheeler, Senior Project Manager  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket Nos. 50-424 and 50-425

Enclosures:

1. Amendment No. 92 to NPF-68
2. Amendment No. 70 to NPF-81
3. Safety Evaluation

cc w/encl: See next page

DOCUMENT NAME: G:\VOGTLE\VOG92172.AMD

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

November 30, 1995

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

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Sincerely,

A handwritten signature in cursive script, appearing to read "Louis L. Wheeler".

Louis L. Wheeler, Senior Project Manager  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket Nos. 50-424 and 50-425

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1. Amendment No. 92 to NPF-68
2. Amendment No. 70 to NPF-81
3. Safety Evaluation

cc w/encl: See next page

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Vogtle Electric Generating Plant

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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. 92  
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 March 17, 1995, as supplemented by letter dated July 6, 1995, 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.

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PDR ADDCK 05000424  
P PDR

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. 92, 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 within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Herbert N. Berkow, Director  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Technical Specification  
Changes

Date of Issuance: November 30, 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. 70  
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 March 17, 1995, as supplemented by letter dated July 6, 1995, 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.

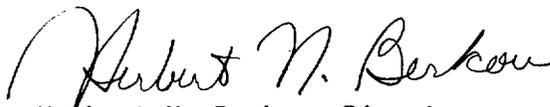
2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-81 is hereby amended to read as follows:

Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 70 , 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 within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Herbert N. Berkow, Director  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Technical Specification  
Changes

Date of Issuance: November 30, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 92

FACILITY OPERATING LICENSE NO. NPF-68

DOCKET NO. 50-424

AND

TO LICENSE AMENDMENT NO. 70

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.

<u>Remove Pages</u>	<u>Insert Pages</u>
I	I
II	II
IX	IX
X	X
XI	XI
XIX	XIX
XXIII	XXIII
3/4 6-10	3/4 6-10
3/4 9-4	3/4 9-4
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\* overflow page - no change

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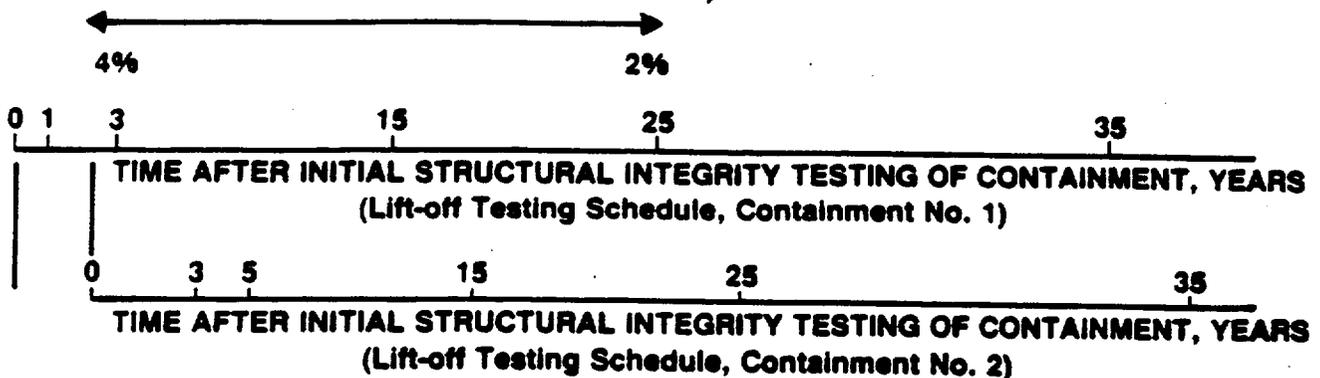
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**SAMPLE SIZE CRITERIA (SEE SECTION 4.6.1.6.1)**



**Schedule to be used provided:**

- a. The containments are identical in all aspects such as size, tendon system, design, materials of construction, and method of construction. The tendon system for Unit 2 does not provide for detensioning. Detensioning can be performed only on the Unit 1 tendon system.
- b. The 1-year inspection for Unit 2 will consist of a visual inspection only. No lift-off testing will be performed on Unit 2 until the 3-year inspection.
- c. There is no unique situation that may subject either containment to a different potential for structural or tendon deterioration.
- d. The Unit 1 and Unit 2 surveillances may be performed back-to-back to facilitate detensioning of Unit 1 tendons during the Unit 2 surveillance.
- e. In order to perform back-to-back surveillances on Units 1 and 2, the Unit 1 10-year surveillance and the Unit 2 5-year surveillance are to be performed between 5/1/95 and 11/1/95.

FIGURE 3.6-1

SCHEDULE OF LIFT-OFF TESTING FOR TWO CONTAINMENTS AT A SITE

## REFUELING OPERATIONS

### 3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

#### LIMITING CONDITION FOR OPERATION

3.9.4 The containment building penetrations shall be in the following status:

- a. The equipment door closed and held in place by a minimum of four bolts,
- b. The emergency airlock is isolated by at least one airlock door, and the personnel airlock is isolable by at least one airlock door with a designated individual available to close the personnel airlock door; and,
- c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:
  - 1) Closed by an isolation valve, blind flange, or manual valve, or
  - 2) Be capable of being closed by an OPERABLE automatic containment ventilation isolation valve (HV-2626 A&B, HV-2627 A&B, HV-2628 A&B, HV-2629 A&B).

APPLICABILITY: During CORE ALTERATIONS or movement of irradiated fuel within the containment.

#### ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or movement of irradiated fuel in the containment building.

#### SURVEILLANCE REQUIREMENTS

4.9.4 Each of the above required containment building penetrations shall be determined to be either in its required condition or capable of being closed by an OPERABLE automatic containment ventilation isolation valve (HV-2626 A&B, HV-2627 A&B, HV-2628 A&B, HV-2629 A&B) within 100 hours prior to the start of and at least once per 7 days during CORE ALTERATIONS or movement of irradiated fuel in the containment building by:

- a. Verifying the penetrations are in their required condition, or
- b. Testing the containment ventilation isolation valves per the applicable portions of Specification 4.6.3.2.

## 3/4.9 REFUELING OPERATIONS

### BASES

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#### 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. The locking closed of the required valves, except valves 1208-U4-176 and 1208-U4-177 for short periods of time to maintain chemistry control, during refueling operations precludes the possibility of uncontrolled boron dilution of the filled portions of the Reactor Coolant System. These actions prevent flow to the RCS of unborated water in excess of that analyzed. These limitations are consistent with the initial conditions assumed for the Boron Dilution Accident in the safety analysis. The Boron concentration value of 2000 ppm or greater ensures a  $K_{eff}$  of 0.95 or less and includes a conservative allowance for calculational uncertainties of 100 ppm of boron.

#### 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 safety analyses.

#### 3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

The requirements on containment building penetration closure and OPERABILITY ensure that a release of radioactive material from containment will be minimized. 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. Item b of this LCO includes requirements for both the emergency airlock and the personnel airlock. The emergency airlock is required to be isolated by at least one airlock door at all times when Specification 3.9.4 is applicable.

The personnel airlock is required by Item b of this LCO to be isolable by at least one airlock door. Both containment personnel airlock doors may be open during movement of irradiated fuel in the containment and during core alterations provided one airlock door is isolable. The personnel airlock is isolable when the following criteria are satisfied.

1. one personnel airlock door is OPERABLE,
2. at least 23 feet of water shall be maintained over the top of the reactor vessel flange in accordance with Specification 3.9.10.1,
3. a designated individual is available to close the door.

## REFUELING OPERATIONS

### BASES

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#### 3/4.9.4 CONTAINMENT BUILDING PENETRATIONS (continued)

OPERABILITY of a containment personnel airlock door requires that the door seal protectors are easily removed, that no cables or hoses are being run through the airlock, and that the airlock door is capable of being quickly closed. The requirement that the plant maintain 23 feet of water above the reactor vessel flange ensures there is sufficient time to close the personnel airlock following a loss of shutdown cooling before boiling occurs. This requirement for the personnel airlock may be satisfied by maintaining at least one airlock door closed.

#### 3/4.9.5 COMMUNICATIONS

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity conditions during CORE ALTERATIONS.

#### 3/4.9.6 REFUELING MACHINE

The OPERABILITY requirements of the refueling machine and auxiliary hoist ensure that:

(1) The refueling machine will be used for the movement of fuel assemblies and/or rod control cluster assemblies (RCCA) or thimble plug assemblies, and the auxiliary hoist will be used for the movement of control rod drive shafts,

(2) the refueling machine will have sufficient load capacity to lift a fuel assembly and/or a rod control cluster assembly or thimble plug assembly, and the auxiliary hoist will have sufficient load capacity to lift a control rod drive shaft and attached RCCA, and

(3) the core internals and reactor vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

#### 3/4.9.7 CRANE TRAVEL - SPENT FUEL STORAGE AREAS

The restriction on movement of loads in excess of the nominal weight of a fuel and control rod assembly and associated handling tool over other fuel assemblies in the storage pool ensures that in the event this load is dropped: (1) the activity release will be limited to that contained in a single fuel assembly, and (2) any possible distortion of fuel in the storage racks will not result in a critical array. This assumption is consistent with the activity release assumed in the safety analyses.

## REFUELING OPERATIONS

### BASES

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#### 3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

The requirement that at least one residual heat removal (RHR) train be in operation ensures that: (1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor vessel below 140°F as required during the REFUELING MODE, and (2) sufficient coolant circulation is maintained through the core to minimize the effect of a boron dilution incident and prevent boron stratification.

The requirement to have two RHR trains OPERABLE when there is less than 23 feet of water above the reactor vessel flange ensures that a single failure of the operating RHR train will not result in a complete loss of residual heat removal capability. With the reactor vessel head removed and at least 23 feet of water above the reactor pressure vessel flange, a large heat sink is available for core cooling. Thus, in the event of a failure of the operating RHR train, adequate time is provided to initiate emergency procedures to cool the core.

#### 3/4.9.9 CONTAINMENT VENTILATION ISOLATION SYSTEM

The OPERABILITY of this system ensures that the containment vent and purge penetrations will be automatically isolated upon detection of high radiation levels within the containment. The OPERABILITY of this system is required to restrict the release of radioactive material from the containment atmosphere to the environment.

#### 3/4.9.10 and 3/4.9.11 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 safety analysis.

#### 3/4.9.12 FUEL HANDLING BUILDING POST ACCIDENT VENTILATION SYSTEM

The operability requirements on the Fuel Handling Building Post-Accident Ventilation Systems are intended to ensure that this equipment will be available in the event that a fuel handling accident results in the release of radioactive material from an irradiated fuel assembly. Although no credit is taken for the operation of this equipment in the safety analyses, its availability will serve as defense-in-depth in the event of a fuel handling accident in the fuel handling building. ANSI N510-1980 and ASTM D3803-89 will be used as a procedural guide for surveillance testing. Verification of heater power dissipation (KW) for surveillance testing is referenced to 460 volts.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 92 TO FACILITY OPERATING LICENSE NPF-68  
AND AMENDMENT NO. 70 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 March 17, 1995, as supplemented by letter dated July 6, 1995, Georgia Power Company, et al. (GPC or the licensee) proposed license amendments to change the Technical Specifications (TS) for Vogtle Electric Generating Plant (VEGP or Vogtle), Units 1 and 2. The proposed changes would revise TS 3/4.9.4, Containment Building Penetrations, to allow the personnel airlock to be open during core alterations or movement of irradiated fuel within the containment. The July 6, 1995, letter provided clarifying information that did not change the scope of the March 17, 1995, application and initial proposed no significant hazards consideration determination.

2.0 EVALUATION

The applicable staff positions regarding opening of airlock doors during refueling operations are stated in Section 3.9.4 (Bases) of the Improved Standard Technical Specifications (NUREG-1431, Revision 1, "Standard Technical Specifications for Westinghouse Plants"). Applicable portions of the Bases are quoted below:

The containment air locks, which are also part of the containment pressure boundary, provide a means for personnel access during MODES 1, 2, 3, and 4 unit operation in accordance with LCO [Limiting Condition for Operation] 3.6.2, "Containment Air Locks." Each air lock has a door at both ends. The doors are normally interlocked to prevent simultaneous opening when containment OPERABILITY is required. During periods of unit shutdown when containment closure is not required, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment entry is necessary. During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, containment closure is required; therefore, the door interlock mechanism may remain disabled, but one air lock door must always remain closed.

The requirements for containment penetration closure ensure that a release of fission product radioactivity within containment will be restricted from escaping to the environment. The closure restrictions are sufficient to restrict fission product radioactivity release from containment due to a fuel handling accident during refueling.

During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, the most severe radiological consequences result from a fuel handling accident. The fuel handling accident is a postulated event that involves damage to irradiated fuel [...]. Fuel handling accidents [...] include dropping a single irradiated fuel assembly and handling tool or a heavy object onto other irradiated fuel assemblies. The requirements of LCO 3.9.7, "Refueling Cavity Water Level," and the minimum decay time of 100 hours prior to CORE ALTERATIONS ensure that the release of fission product radioactivity, subsequent to a fuel handling accident, results in doses that are well within the guideline values specified in 10 CFR [Part] 100. Standard Review Plan, Section 15.7.4, Rev. 1 [...], defines "well within" 10 CFR [Part] 100 to be 25% or less of the 10 CFR [Part] 100 values. The acceptance limits for offsite radiation exposure will be 25% of 10 CFR 100 values or the NRC staff approved licensing basis (e.g., a specified fraction of 10 CFR [Part] 100 limits).

As stated above, the basis for the staff position against simultaneous opening of both airlock doors during core alterations is to limit fission product leakage in the event of a design basis fuel handling accident. In performing analyses of the radiological consequences of a fuel handling accident, the criteria of Standard Review Plan Section (SRP) 15.7.4 are used. If fuel handling is prohibited when the containment is open, radiological consequences need not be calculated. If the containment will be open during fuel handling operations, automatic isolation by radiation detection instrumentation must be provided for penetrations and calculations must demonstrate acceptable consequences. However, automatic isolation of airlock doors is not practicable. The licensee has shown by analysis that the requirement for airlock closure need not be applied to VEGP and a TS amendment has been requested to reflect this conclusion.

The staff evaluated the potential radiological consequences of a fuel handling accident at VEGP, based upon the conditions of the proposed TS changes. The staff reviewed the licensee's submittals; however, the staff did not rely solely on them for determining the acceptability of the proposed changes. Instead, the staff performed an independent analysis to determine conformance with the requirements of 10 CFR Part 100 and General Design Criterion (GDC) 19 of Appendix A to 10 CFR Part 50. The staff's analysis used the accident source term given in Regulatory Guide 1.4, the assumptions contained in Regulatory Guide 1.25, and the review procedures specified in SRP Sections 15.7.4 and 6.4. The staff assumed an instantaneous puff release of noble gases and radioiodines from the gap and plenum of the broken fuel rods. These gas bubbles will then pass through at least 23 feet of water covering the fuel prior to reaching the containment atmosphere. All airborne activity reaching the containment atmosphere is assumed to exhaust to the environment within 2 hours. As stipulated in the proposed TS change, the gap activity is assumed to have decayed for a period of 100 hours.

The staff computed the offsite doses for VEGP using the above assumptions and NRC computer code ACTICODE. Control room operator doses were determined using the methodology in SRP Section 6.4. The computed offsite doses and control room operator doses are within the acceptance criteria given in SRP Section

15.7.4 and GDC 19. The assumptions used in calculating those doses and the resulting calculated values are attached in Tables 1 and 2.

The proposed changes to the TS will result in delayed containment closure in the event of a fuel handling accident. However, the staff has concluded that the radiological consequences associated with this accident are within the acceptance criteria set forth in 10 CFR Part 100 and the control room operator dose criteria specified in GDC-19 of Appendix A to 10 CFR Part 50. Accordingly, the licensee's proposal is acceptable.

In addition to the changes to TS 3/4.9.4, the licensee proposed editorial changes to the index of the TS and to TS page 3/4 6-10. The staff reviewed the licensee's proposed changes and found them to be acceptable editorial corrections to the TS.

### 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 and change surveillance requirements. 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 (60 FR 35077 dated July 5, 1995). 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.

Attachment:  
Tables 1 and 2

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Date: November 30, 1995