

March 31, 2006

Mr. D. E. Grissette
Vice President
Southern Nuclear Operating
Company, Inc.
Post Office Box 1295
Birmingham, AL 35201-1295

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNIT 2, ISSUANCE OF
EMERGENCY AMENDMENT REGARDING CONDENSATE STORAGE TANK
LIMITS (TAC NO. MD0703)

Dear Mr. Grissette:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 120 to Facility Operating License NPF-81 for the Vogtle Electric Generating Plant, Unit 2. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated March 29, 2006.

The amendment revises TS 3.7.6, "Condensate Storage Tank (CST)," to require two CSTs to be OPERABLE and to increase the combined safety-related minimum volume. The amendment also revises Surveillance Requirement 3.7.6 to reflect the additional limit for CST volume. This amendment was issued as an emergency amendment to allow the licensee to resume power operations following the unplanned modification of the reactor coolant system.

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,

/RA/

Christopher Gratton, Sr. Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-425

Enclosures:

1. Amendment No. 120 to NPF-81
2. Safety Evaluation

cc w/encls: See next page

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SOUTHERN NUCLEAR OPERATING COMPANY, INC.

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. 120
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 Southern Nuclear Operating Company, Inc. (the licensee), acting for itself, Georgia Power Company Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia (the owners), dated March 29, 2006 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. 120 , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. Southern Nuclear 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 of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/s/ Ed Hackett for
Evangelos C. Marinos, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: March 31, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 120

FACILITY OPERATING LICENSE NO. NPF-81

DOCKET NO. 50-425

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contain marginal lines indicating the areas of change. Bases pages included in this amendment are also listed.

Remove

3.7.6-1

B 3.7.6-3

B 3.7.6-4

Insert

3.7.6-1

B 3.7.6.3-3

B 3.7.6.3-4

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 120 TO FACILITY OPERATING LICENSE NPF-81
SOUTHERN NUCLEAR OPERATING COMPANY, INC.
VOGTLE ELECTRIC GENERATING PLANT, UNIT 2
DOCKET NO. 50-425

1.0 INTRODUCTION

By letter dated March 29, 2006, Southern Nuclear Operating Company, Inc., the licensee for the operation of Vogtle Electric Generating Plant (Vogtle), Unit 2, requested an emergency amendment to the Vogtle Unit 2 Technical Specifications (TS). Specifically, the proposed change would revise Limiting Condition for Operation (LCO) 3.7.6, "Condensate Storage Tank (CST)," to require two CSTs to be OPERABLE and to increase the combined safety-related minimum volume from 340,000 gallons to 378,000 gallons. The related required action and surveillance requirement would also be changed accordingly.

The licensee stated that the need for this emergency TS change arose from a plant modification to remove (1) the bypass line between the inboard and outboard isolation valves in the suction line of the residual heat removal (RHR) system from the reactor coolant system (RCS) Loop 1 to eliminate a leakage discovered on March 20, 2006, and (2) the inboard valve bonnet depressurization line. The bypass line was originally installed to provide a means to relieve pressure buildup between the valves that could hinder the ability to open these valves. As a result of the removal of the bypass line, an additional 3-hour delay, for a total of a 12-hour delay, is needed to reduce the RHR suction line pressure before placing RHR Train A in service. During this time, cooling of the RCS is provided by the steam generators with the auxiliary feedwater (AFW) system. The proposed increase in the required CST minimum volume is to accommodate the additional three-hour operation of the AFW system.

The modification of the RCS to remove the bypass line and bonnet depressurization piping was evaluated by the licensee under Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.59, "Changes, tests, and experiments," and will not be evaluated as part of this amendment.

2.0 REGULATORY EVALUATION

General design criterion (GDC) 34 in Appendix A to 10 CFR Part 50 requires a system to remove fission product decay heat and other residual heat from the reactor core at a rate such that the specified acceptable fuel design limits and design conditions of that reactor coolant pressure boundary are not exceeded. GDC 44 requires a system to transfer the combined heat load from the structures, systems, and components important to safety, to an ultimate heat sink under normal operating and accident conditions. In the plant shutdown process, the plant relies

on the AFW to provide initial plant cooldown to the RHR system entry conditions. Since the AFW pumps take suction from the CSTs, the staff reviews the licensee's proposed changes to assure that they provide sufficient CST water supply to the AFW system for plant cooldown, and therefore, comply with GDC 34 and 44.

In addition to the NRC requirements cited above, the licensing basis for the Vogtle AFW system was established to a large extent by the licensee's resolution of Three Mile Island (TMI) Action Plan (NUREG-0737) Item II.E.1.1, "Auxiliary Feedwater System Evaluation." This TMI Action Plan Item was established to assure that AFW systems were capable of performing their specified functions. Nuclear Regulatory Commission (NRC) staff acceptance of the proposed change will be based primarily upon continued compliance with the applicable NRC requirements and the provisions of TMI Action Plan Item II.E.1.1, as well as other licensing basis considerations that are applicable as discussed primarily in Section 10.4.7 of the Vogtle Updated Final Safety Analysis Report.

3.0 TECHNICAL EVALUATION

LCO and SR Changes

The existing LCO 3.7.6 specified that, during MODES 1, 2, and 3 operation, one CST shall be OPERABLE with a safety-related volume \$ 340,000 gallons. The emergency TS change would revise LCO 3.7.6 to read the following:

"Two CSTs shall be OPERABLE with:

- a. A combined safety-related volume of \$ 378,000 gallons; and
- b. The CST aligned to supply the auxiliary feedwater pumps shall have a safety-related volume \$ 340,000 gallons."

The current RCS cooldown practice is to use the AFW system to maintain the plant in MODE 3 for 4 hours, with a subsequent cooldown to the RHR entry conditions within the next 5 hours. Due to the removal of the bypass line between the inboard and outboard isolation valves in the RHR suction line, a 12-hour cooling period is needed to reduce the suction line pressure prior to placing the RHR system in service. The licensee changed the RCS cooldown procedure to maintain the plant in Mode 3 for 7 hours, from the current 4 hours, before the subsequent 5-hour cooldown to the RHR entry conditions. Therefore, the licensee proposed to revise LCO 3.7.6 to require the operability of both CSTs and to increase the minimum required safety-related CST water volume from 340,000 to 378,000 gallons to accommodate the extension of the total AFW operation to 12 hours from the current 9 hours during the RCS cooldown to the RHR system entry condition.

The licensee has determined that the increase of the minimum required CST safety-related water volume from 340,000 to 378,000 gallons is sufficient to accommodate the 3-hour extension for the AFW operation in MODE 3. This additional CST inventory requirement is based on the calculation of the additional required water in the steam generators to remove the decay heat and the reactor coolant pump (RCP) heat for 3 additional hours in Mode 3. The licensee has determined that an additional 40,100 gallons of CST water inventory is needed based on the calculations that 33,500 and 6,600 gallons of water, respectively, are needed to

remove the integrated decay heat and RCP heat for the 3 additional hours of AFW operation in Mode 3. The licensee also indicated that the current LCO 3.7.6 requirement of 340,000 was a roundup value from the calculated value of 336,090 gallons for 9 hours of AFW operation. Therefore, for the extended 12-hour AFW operation, the required CST water volume would be 376,190 gallons. The licensee rounded this value up to 378,000 gallons. The NRC staff notes that the actual requirement may be slightly lower because the decay heat would be lower after 9 hours than that used in the calculation. It should be noted that as the CST aligned to the AFW pumps is required to have a minimum safety-related volume of 340,000 gallons, the total amount of the water volume in both CSTs would be much more than the required CST water volume of 378,000 gallons. Therefore, there is assurance that sufficient CST water from both CSTs will be available to supply the AFW pumps for 12-hour operation so that the residual heat removal requirements of GDC 34 and 44 are met. The NRC staff concludes that the proposed change to LCO 3.7.6 is acceptable.

Related to the proposed revision to LCO 3.7.6, the licensee also proposed the following revisions in the Required Action A and Surveillance Requirement SR 3.7.6.1:

For Condition A, "CST volume not within limit," and Required Action A.1 that requires the operator to "align AFW pumps to OPERABLE CST," the licensee proposed to revise Condition A as "CST volume(s) not within limit(s)," and to revise Required Action A.1 to "restore volume(s) to within limit(s)." These proposed changes reflect the fact that the revised LCO 3.7.6 requires both CSTs to be operable with two Minimum required CST volume limits, and are therefore acceptable.

For SR 3.7.6.1, the surveillance requirement statement would be changed from "verify the CST volume is within limit" to "verify CST volumes within limits." This proposed change reflects the revised LCO 3.7.6 requiring the operability of two CSTs with two minimum required limits, and is therefore acceptable.

Three Mile Island Action Plan (NUREG-0737) Item II.E.1.1 Capability

During a telephone conference with the licensee on March 30, 2006, the NRC staff requested the licensee to address any impact that the proposed change would have on the resolution of TMI Action Plan Item II.E.1.1, "Auxiliary Feedwater System Evaluation." In particular, the NRC staff requested that the licensee confirm that the capability to transfer AFW pump suction to an emergency/alternate source of water in the event that the normal source of water should either become unavailable or depleted will continue to be consistent with the licensee's resolution of TMI Action Plan Item II.E.1.1. The licensee stated that the proposed change will not impact the resolution of TMI Action Plan Item II.E.1.1. With respect to the specific area of concern, the licensee indicated that the proposed change to the CST inventory requirements will not reduce the amount of residual water that is currently available and maintained in the bottom of the CSTs. This water inventory will continue to be sufficient for performing this function (i.e., realignment of the AFW pump suction) in accordance with the plant licensing basis as established by resolution of TMI Action Plan Item II.E.1.1. TMI Action Plan Item II.E.1.1 was approved by the NRC in NUREG-1137, as documented in the NRC staff's Safety Evaluation Report dated June 1985. Based upon the licensee's response, the NRC staff finds that the resolution of TMI Action Plan Item II.E.1.1 will not be affected by the proposed change and therefore, the proposed change is considered to be acceptable in this regard.

Single Active Failure Assessment

The licensee evaluated the impact of the proposed change on the capability of the CSTs to supply water to the AFW pumps for steam generator make-up assuming a single active failure. The CSTs are passive components and all AFW trains are aligned to take suction from the same CST while they are in standby. Because there are no single active failures that would prevent the operators from realigning the AFW pumps to take suction from the other CST, the single active failure criterion specified by GDC 34 and GDC 44 will continue to be satisfied. Therefore, the proposed change is considered to be acceptable with respect to single active failure considerations.

Bases Page Changes

The licensee modified the TS Bases to reflect the change. Since the Bases are not part of the TS, the NRC staff reviewed the Bases only to assure consistency with the proposed change. The staff is not approving the Bases change, but is including the revised Bases pages for completeness.

Summary

The NRC staff has reviewed the licensee's emergency TS change to LCO 3.7.6 to increase the minimum required CST safety-related volume, as well as other related changes. Based on the evaluation described above, the staff concludes that the proposed changes are acceptable.

4.0 STATEMENT OF EMERGENCY CIRCUMSTANCES

Section 50.91 of 10 CFR Part 50 provides special exceptions for the issuance of amendments when the usual 30-day public notice cannot be met. One type of special exception is an emergency. Specifically, 10 CFR 50.91(a)(5) provides that where the NRC finds that an emergency situation exists, in that failure to act in a timely way would result in the prevention of the resumption of power operation, it may issue a license amendment involving no significant hazards consideration without prior notice and opportunity for a hearing or public comment. In this situation, the NRC will publish a notice of issuance under 10 CFR 2.106, providing for opportunity of a hearing and for public comment after issuance.

The licensee requested that the NRC issue this amendment on an emergency basis to allow Vogtle Unit 2 to resume power operation. Following the unexpected leakage from the RHR suction isolation valve bypass line on March 20, 2006, and in an effort to eliminate the potential for further leakage from the line, the licensee removed the bypass line. The licensee also removed the valve bonnet depressurization vent line. During the modifications, the need for the additional CST inventory was identified due to the additional time the Vogtle Unit 2 is required to stay in hot standby before initiating shutdown cooling.

Because the leakage in the RHR bypass line was unexpected, the licensee could not have anticipated the need for a license amendment that would allow for a 30-day comment period. Additionally, the proposed amendment involves no significant hazards as specified in 10 CFR 50.92.

5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission's regulations in 10 CFR 50.92(c) state that the Commission may make a final determination that a license amendment involves no significant hazards consideration if operation of the facility in accordance with the amendment would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or,
- (2) Create the possibility of a new or different kind of accident from any previously evaluated; or,
- (3) Involve a significant reduction in a margin of safety.

The following analysis was provided by the licensee in its March 29, 2006, letter:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

In order to relieve sufficient pressure between the RHR loop suction isolation valves and in the bonnet of the inboard valve, a 12-hour delay is required before placing RHR Train "A" in service for performing a plant cooldown. During this time, cooling of the RCS is provided by the auxiliary feedwater (AFW) system. To achieve the necessary pressure reduction an additional three (3) hours, for a total of twelve (12) hours, is required prior to placing RHR Train "A" in service. Technical Specification (TS) 3.7.6, "Condensate Storage Tank (CST)" requires one CST to be OPERABLE with a safety-related volume of at least 340,000 gallons. To accommodate the additional three (3) hours of AFW cooling, the minimum required CST inventory must be increased from 340,000 gallons to 378,000 gallons. In order to ensure the required inventory, both CSTs will be required to be OPERABLE. The proposed change continues to ensure that the accident analysis assumptions continue to be met. In addition, the proposed [change] does not result in any functional change to any systems, structures, or components and has no impact on any assumed initiator of any analyzed accident.

Therefore, based on the conclusions of the above analysis, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

In order to relieve sufficient pressure between the RHR loop suction isolation valves and in the bonnet of the inboard valve, a 12-hour delay is required before placing RHR Train "A" in service for performing a plant cooldown. During this time, cooling of the RCS is provided by the auxiliary feedwater (AFW) system. To achieve the necessary pressure reduction an additional three (3) hours, for a total of twelve (12) hours, is required prior to placing RHR Train "A" in service. Technical Specification (TS) 3.7.6, "Condensate Storage Tank (CST)" requires one CST to be OPERABLE with a safety-related volume of at least 340,000 gallons. To accommodate the additional three (3) hours of AFW cooling, the minimum required CST inventory must be increased from 340,000 gallons

to 378,000 gallons. In order to ensure the required inventory, both CSTs will be required to be OPERABLE. The proposed change continues to ensure that the accident analysis assumptions continue to be met. In addition, the proposed [change] does not result in any functional change to any systems, structures, or components.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

In order to relieve sufficient pressure between the RHR loop suction isolation valves and in the bonnet of the inboard valve, a 12-hour delay is required before placing RHR Train "A" in service for performing a plant cooldown. During this time, cooling of the RCS is provided by the auxiliary feedwater (AFW) system. To achieve the necessary pressure reduction an additional three (3) hours, for a total of twelve (12) hours, is required prior to placing RHR Train "A" in service. Technical Specification (TS) 3.7.6, "Condensate Storage Tank (CST)" requires one CST to be OPERABLE with a safety-related volume of at least 340,000 gallons. To accommodate the additional three (3) hours of AFW cooling, the minimum required CST inventory must be increased from 340,000 gallons to 378,000 gallons. In order to ensure the required inventory, both CSTs will be required to be OPERABLE. The proposed change continues to ensure that the accident analysis assumptions continue to be met. In addition, the proposed [change] does not result in any functional change to any systems, structures, or components.

Therefore, the proposed change does not involve a significant decrease in the margin of safety

The NRC staff has reviewed the licensee's analysis and, based on this review, has concluded that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff has determined that the proposed amendment involves no significant hazards consideration.

6.0 STATE CONSULTATION

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

7.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves 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 made a final no significant hazards finding with respect to the amendment. Accordingly, the amendment meets 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 amendment.

8.0 CONCLUSION

The NRC staff has concluded, based on the considerations discussed above, that (1) the amendment does not (a) involve a significant increase in the probability or consequences of an accident previously evaluated or, (b) create the possibility of a new or different kind of accident from any previously evaluated or, (c) involve a significant reduction in a margin of safety and therefore, the amendment involves no significant hazards consideration; (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (3) such activities will be conducted in compliance with the Commission's regulations, and (4) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: G. Hsii, NRR
J. Tatum, NRR

Date: March 31, 2006