

September 21, 1994

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

Distribution
Docket File
PDII-3 R/F
PUBLIC
SAVarga
HN Berkow
DS Hood
LGBerry
OGC 0-15 B18
J. Zimmerman

M. Sinkule, RII
D. Hagan T-4 A43
G. Hill(4) T-5 C3
C. Grimes 0-11 F23
ACRS(10) T-2 E26
PA 0-17 F2
OC/LFDCB T-9 E10
B. Boger (A), RII
D. Wheeler

SUBJECT: ISSUANCE OF AMENDMENT - VOGTLE ELECTRIC GENERATING PLANT,
UNITS 1 AND 2 (TAC NOS. M89507 AND M89508)

Dear Mr. McCoy:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 75 to Facility Operating License NPF-68 and Amendment No. 54 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 April 28, 1994, and supplemented by letter dated July 29, 1994.

The amendments revise TS 3/4.8.1.1, AC Sources Operating, and are based on Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation," Regulatory Guide 1.9, Revision 3, "Selection, Design, Qualification, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electric Power Systems at Nuclear Power Plants," and NUMARC 87-00, Revision 1, "Guidelines and Technical Bases for NUMARC Initiative Addressing Station Blackout at Light Water Reactors."

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:

Jacob I Zimmerman for:

Louis L. Wheeler, Project Manager

Project Directorate II-3

Division of Reactor Projects - I/II

Office of Nuclear Reactor Regulation

9410040142 940921
PDR ADDCK 05000424
P PDR

Docket Nos. 50-424 and 50-425

Enclosures:

1. Amendment No. 75 to NPF-68
2. Amendment No. 54 to NPF-81
3. Safety Evaluation

NRC FILE CENTER COPY

cc w/enclosures:

DOCUMENT NAME: G:\VOGTLE\VOG89507.AMD

See next page

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

*See previous concurrence

OFFICE	LA:PD23:DRPE	E	PM:PD23:DRPE	*PM:PD23:DRPE	*BC:OTSB	*OGC	D:PD23:DRPE
NAME	CNORSWORTHY <i>cn</i>		JZIMMERMAN <i>JZ</i>	LWHEELER <i>LW</i>	CGRIMES	CBarth	HBARKOW <i>HB</i>
DATE	9/12/94		9/12/94	09/12/94	09/13/94	09/13/94	9/14/94 <i>9/14/94</i>

030000
134

JFO

CP

Mr. C. K. McCoy
Georgia Power Company

Vogtle Electric Generating Plant

cc:

Mr. J. A. Bailey
Manager - Licensing
Georgia Power Company
P. O. Box 1295
Birmingham, Alabama 35201

Harold Reheis, Director
Department of Natural Resources
205 Butler Street, SE. Suite 1252
Atlanta, Georgia 30334

Mr. J. B. Beasley
General Manager, Vogtle Electric
Generating Plant
P. O. Box 1600
Waynesboro, Georgia 30830

Attorney General
Law Department
132 Judicial Building
Atlanta, Georgia 30334

Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
101 Marietta Street, NW., Suite 2900
Atlanta, Georgia 30323

Mr. Ernie Toupin
Manager of Nuclear Operations
Power Supply Operations
Oglethorpe Power Corporation
2100 East Exchange Place
Tucker, Georgia 30085-1349

Office of Planning and Budget
Room 615B
270 Washington Street, SW.
Atlanta, Georgia 30334

Charles A. Patrizia, Esquire
Paul, Hastings, Janofsky & Walker
12th Floor
1050 Connecticut Avenue, NW.
Washington, DC 20036

Office of the County Commissioner
Burke County Commission
Waynesboro, Georgia 30830

Arthur H. Domby, Esquire
Troutman Sanders
NationsBank Plaza
600 Peachtree Street, NE.
Suite 5200
Atlanta, Georgia 30308-2216

Mr. J. D. Woodard
Senior Vice President -
Nuclear Operations
Georgia Power Company
P. O. Box 1295
Birmingham, Alabama 35201

Resident Inspector
U. S. Nuclear Regulatory Commission
P. O. Box 572
Waynesboro, Georgia 30830



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

September 21, 1994

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

SUBJECT: ISSUANCE OF ADMENDMENT - VOGTLE ELECTRIC GENERATING PLANT,
UNITS 1 AND 2 (TAC NOS. M89507 AND M89508)

Dear Mr. McCoy:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 75 to Facility Operating License NPF-68 and Amendment No. 54 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 April 28, 1994, and supplemented by letter dated July 29, 1994.

The amendments revise TS 3/4.8.1.1, AC Sources Operating, and are based on Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation," Regulatory Guide 1.9, Revision 3, "Selection, Design, Qualification, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electric Power Systems at Nuclear Power Plants," and NUMARC 87-00, Revision 1, "Guidelines and Technical Bases for NUMARC Initiative Addressing Station Blackout at Light Water Reactors."

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, 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 No. 75 to NPF-68
2. Amendment No. 54 to NPF-81
3. Safety Evaluation

cc w/enclosures:

See next page



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. 75
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 April 28, 1994, and supplemented by letter dated July 29, 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. 75, 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 immediately with the exception of the change to Technical Specification Surveillance Requirement 4.8.1.1.2.a.4. This change is effective upon replacement of the diesel generator governor with a model that will accelerate the engines to operating speed within a range of approximately 20 to 40 seconds in the test mode. The modification is scheduled for refueling outage 1R05 during the Fall of 1994.

FOR THE NUCLEAR REGULATORY COMMISSION

Herbert N. Berkow for

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: September 21, 1994



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. 54
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 April 28, 1994, and supplemented by letter dated July 29, 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-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. 54, 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 immediately with the exception of the change to Technical Specification Surveillance Requirement 4.8.1.1.2.a.4. This change is effective upon replacement of the diesel generator governor with a model that will accelerate the engines to operating speed within a range of approximately 20 to 40 seconds in the test mode. The modification is scheduled for refueling outage 2R04 during the Spring of 1995.

FOR THE NUCLEAR REGULATORY COMMISSION

Kate N. Talbot for

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: September 21, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 75

FACILITY OPERATING LICENSE NO. NPF-68

DOCKET NO. 50-424

AND

TO LICENSE AMENDMENT NO. 54

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

3/4 8-1
3/4 8-2
3/4 8-3
3/4 8-6
3/4 8-7
3/4 8-8
B 3/4 8-1

Insert Pages

3/4 8-1
3/4 8-2
3/4 8-3
3/4 8-6
3/4 8-7
3/4 8-8
B 3/4 8-1

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E Distribution System, and
- b. Two separate and independent diesel generators, each with:
 - 1) A day tank containing a minimum volume of 650 gallons of fuel (52% of instrument span) (LI-9018, LI-9019),
 - 2) A separate Fuel Storage System containing a minimum volume of 68,000 gallons of fuel (76% of instrument span) (LI-9024, LI-9025), and
 - 3) A separate fuel transfer pump,

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

ACTION:

- a. With one offsite circuit of the above-required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With either diesel generator inoperable, demonstrate the OPERABILITY of the above required A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. If the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirements 4.8.1.1.2.g.1 and 4.8.1.1.2.a.5 within 8 hours*#, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated. Restore the inoperable diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

*This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABILITY.

#The diesel shall not be rendered inoperable by activities performed to support testing pursuant to the ACTION Statement (e.g., an air roll).

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION

ACTION (Continued)

- c. With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter, and, if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirements 4.8.1.1.2.g.1 and 4.8.1.1.2.a.5 within 8 hours*, unless the OPERABLE diesel generator is already operating#, or the absence of any potential common mode failure for the remaining diesel generator is demonstrated. Restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore the other A.C. power source (offsite circuit or diesel generator) to OPERABLE status in accordance with the provisions of 3.8.1.1, ACTION Statement a or b, as appropriate, with the time requirement of that ACTION Statement based on the time of initial loss of the remaining inoperable A.C. power source. A successful test of diesel generator OPERABILITY per Surveillance Requirements 4.8.1.1.2.g.1 and 4.8.1.1.2.a.5 performed under the ACTION Statement for an OPERABLE diesel generator or a restored to OPERABLE diesel generator satisfies the diesel generator test requirement of ACTION Statement b.
- d. With one diesel generator inoperable in addition to ACTION b. or c. above, verify that:
1. All required systems, subsystems, trains, components, and devices that depend on the remaining OPERABLE diesel generator as a source of emergency power are also OPERABLE, and
 2. When in MODE 1, 2, or 3, the steam-driven auxiliary feedwater pump is OPERABLE.

If these conditions are not satisfied within 2 hours be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

- e. With two of the above required offsite A.C. circuits inoperable, restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. Following restoration of one offsite source, follow ACTION Statement a with the time requirement of that ACTION Statement based

*This test is required to be completed regardless of when the inoperable EDG is restored to OPERABILITY.

#The diesel shall not be rendered inoperable by activities performed to support testing pursuant to the ACTION Statement (e.g., an air roll).

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION

ACTION (Continued)

on the time of the initial loss of the remaining inoperable offsite a.c. circuit.

- f. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing the requirements of Specification 4.8.1.1.1.a. within 1 hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Following restoration of one diesel generator unit, follow ACTION Statement b with the time requirement of that ACTION Statement based on the time of initial loss of the remaining inoperable diesel generator. A successful test of diesel OPERABILITY per Surveillance Requirements 4.8.1.1.2.g.1 and 4.8.1.1.2.a.5 performed under this ACTION Statement for a restored to OPERABLE diesel satisfies the diesel generator test requirements of ACTION Statement b.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the Onsite Class 1E Distribution System shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, and indicated power availability.

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

- a. In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:

- 1) Verifying the fuel level in the day tank (LI-9018, LI-9019),
- 2) Verifying the fuel level in the fuel storage tank (LI-9024, LI-9025),
- 3) Verifying the fuel transfer pump starts and transfers fuel from the storage system to the day tank,
- 4) Verifying the diesel starts* and accelerates to at least 440 RPM with generator voltage and frequency at 4160 + 170, -135 volts and 60 ± 1.2 Hz. The diesel generator shall be started for this test by using one of the following signals:

*All diesel generator starts for the purpose of surveillance testing as required by Specification 4.8.1.1.2 may be preceded by an engine prelube period as recommended by the manufacturer so that the mechanical stress and wear on the diesel engine is minimized.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- 2) Verifying the generator is synchronized, loaded to an indicated value of 6800-7000 kW,** and operates at this loaded condition for at least 60 minutes. This test, if it is performed so it coincides with the testing required by Surveillance Requirement 4.8.1.1.2.a.5, may also serve to concurrently meet those requirements as well.
- h. At least once per 18 months,** during shutdown, by:
- 1) Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturers' recommendations for this class of standby service;
 - 2) Verifying the diesel generator capability to reject a load of greater than or equal to 671 kW (motor-driven auxiliary feed-water pump) while maintaining voltage at $4160 + 240, -410$ volts and speed of less than 484 rpm (less than nominal speed plus 75% of the difference between nominal speed and the Overspeed Trip Setpoint); and recovering voltage to within $4160 + 170, -410$ volts within 3 seconds.
 - 3) Verifying the diesel generator capability to reject a load of 7000 kW without tripping. The generator voltage shall not exceed 5000 volts during and following the load rejection;
 - 4) Simulating a loss-of-offsite power by itself, and:
 - a) Verifying deenergization of the emergency busses and load shedding from the emergency busses, and
 - b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 11.5 seconds,* energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at $4160 + 170, -410$ volts and 60 ± 1.2 Hz during this test.
 - 5) Verifying that on an ESF Actuation test signal, without loss-of-offsite power, the diesel generator starts* on the auto-start signal and operates on standby for greater than or equal to 5 minutes. The generator voltage and frequency shall be $4160 + 170, -135$ volts and $60 * 1.2$ Hz within 11.4 seconds after the

*All engine starts for the purpose of surveillance testing as required by Specification 4.8.1.1.2 may be preceded by an engine prelube period as recommended by the manufacturer to minimize mechanical stress and wear on the diesel engine.

**For any start of a diesel, the diesel must be operated with a load in accordance with the manufacturer's recommendations.

***This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band or momentary variations due to changing bus loads shall not invalidate this test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

auto-start signal; the steady-state generator voltage and frequency shall be maintained within these limits during this test;

- 6) Simulating a loss-of-offsite power in conjunction with an ESF Actuation test signal, and:
 - a) Verifying deenergization of the emergency busses and load shedding from the emergency busses;
 - b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 11.5 seconds,* energizes the auto-connected emergency (accident) loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at 4160 +170, -410 volts and 60 ± 1.2 Hz during this test; and
 - c) Verifying that all automatic diesel generator trips, except engine overspeed, low lube oil pressure, high jacket water temperatures*** and generator differential, are automatically bypassed upon loss of voltage on the emergency bus concurrent with a Safety Injection Actuation signal.
- 7) Verifying the diesel generator operates for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to an indicated 7600 to 7700 kW,** and during the remaining 22 hours of this test, the diesel generator shall be loaded to an indicated 6800-7000 kW.** The generator voltage and frequency shall be 4160 + 170, - 135 volts and 60 ± 1.2 Hz within 11.4 seconds after the start signal; the steady-state generator voltage and frequency shall be 4160 + 170, -410 volts and 60 ± 1.2 Hz during this test.
- 8) Verifying the diesel generator starts and that the generator voltage and frequency are 4160 + 170, -135 volts and 60 ± 1.2 Hz within 11.4 seconds. This surveillance shall be performed within

*All engines starts for the purpose of surveillance testing as required by Specification 4.8.1.1.2 may be preceded by an engine prelube period as recommended by the manufacturer to minimize mechanical stress and wear on the diesel engine.

**This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band or momentary variations due to changing bus loads shall not invalidate the test.

#Failure to maintain voltage and frequency requirements due to grid disturbances does not render a 24-hour test as a failure.

##Deleted by Amendment No. 75 for Unit 1 and Amendment No. 54 for Unit 2

###The high jacket water temperature trip may be bypassed.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

5 minutes of stopping the diesel generator after having operated for a minimum of 2 hours loaded to an indicated 6800 - 7000 kw. Momentary transients outside of the load range do not invalidate this test.

- 9) Verifying that the auto-connected loads to each diesel generator do not exceed the continuous rating of 7000 kW;
- 10) Verifying the diesel generator's capability to:
 - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power;
 - b) Transfer its loads to the offsite power source, and
 - c) Be restored to its standby status.
- 11) Verifying that with the diesel generator operating in a test mode, connected to its bus, a simulated Safety Injection signal overrides the test mode by: (1) returning the diesel generator to standby operation, and (2) automatically energizing the emergency loads with offsite power;
- 12) Verifying that the fuel transfer pump transfers fuel from each fuel storage tank to the day tank of each diesel via the installed cross-connection lines;
- 13) Verifying that the automatic load sequence timer is OPERABLE with the interval between each load block within $\pm 10\%$ of its design interval;
 - i. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 440 rpm in less than or equal to 11.4 seconds; and
 - j. At least once per 10 years by:
 - 1) Draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite solution, or equivalent, and
 - 2) Performing a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code at a test pressure equal to 110% of the system design pressure.

BASES

3/4.8.1, 3/4.8.2, and 3/4.8.3 A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION

The OPERABILITY of the A.C. and D.C power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety-related equipment required for: (1) the safe shutdown of the facility, and (2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criterion 17 of Appendix A to 10 CFR Part 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the safety analyses and are based upon maintaining at least one redundant set of onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss-of-offsite power and single failure of the other onsite A.C. source. The A.C. and D.C. source allowable out-of-service times are based on Regulatory Guide 1.93, "Availability of Electrical Power Sources," December 1974 and Appendix A to Generic Letter 84-15, "Proposed Staff Position to Improve and Maintain Diesel Generator Reliability." When one diesel generator is inoperable, there is an additional ACTION requirement to verify that all required systems, subsystems, trains, components and devices, that depend on the remaining OPERABLE diesel generator as a source of emergency power, are also OPERABLE, and that the steam-driven auxiliary feedwater pump is OPERABLE. This requirement is intended to provide assurance that a loss-of-offsite power event will not result in a complete loss of safety function of critical systems during the period one of the diesel generators is inoperable. The term, verify, as used in this context means to administratively check by examining logs or other information to determine if certain components are out-of-service for maintenance or other reasons. It does not mean to perform the Surveillance Requirements needed to demonstrate the OPERABILITY of the component.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that: (1) the facility can be maintained in the shutdown or refueling condition for extended time periods, and (2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status.

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are based on the recommendations of Regulatory Guides 1.9, Revision 3 "Selection, Design, Qualification, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electric Power Systems of Nuclear Power Plants," July 1993; and 1.137, "Fuel-Oil Systems for Standby Diesel Generators," Revision 1, October 1979, Appendix A to Generic Letter 84-15; Generic Letter 83-26, "Clarification of Surveillance Requirements for Diesel Fuel Impurity Level Tests;" and Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation."



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 75 TO FACILITY OPERATING LICENSE NPF-68
AND AMENDMENT NO. 54 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 April 28, 1994, supplemented by letter dated July 29, 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 eliminate certain Surveillance requirements for the emergency diesel generators (EDGs). These changes are in accordance with the NRC Technical Specification Improvement Program as documented in Generic Letter (GL) 93-05, "Line-Item Technical Specifications Improvements For Testing During Power Operation," dated September 27, 1993, NUREG-1366, "Improvements To Technical Specifications Surveillance Requirements," dated December 1992, and Regulatory Guide 1.9, Revision 3, "Selection, Design, Qualification, And Testing Of Emergency Diesel Generator Units Used As Class 1E Onsite Electrical Power Systems At Nuclear Power Plants," dated July 1993.

By letter dated July 29, 1994, the licensee submitted a revision to their original request by withdrawing a T/S change to Table 4.8-1, Diesel Generator Test Schedule, and S/R 4.8.1.1.3, reporting requirements and its reference in S/R 4.8.1.2 of T/S 3/4.8.1.2. This is because the staff had requested the licensee to commit to GL 94-01 in order to eliminate accelerated testing requirements and the reporting requirements for EDGs. The licensee stated that they cannot, at this time, commit to the conditions of GL 94-01. Also, there were teleconferences between representatives of the licensee and the NRC staff on July 19 and 20, 1994, to discuss the above changes.

The July 29, 1994, letter provided a revision to the proposed amendment and did not change the initial proposed no significant hazards consideration determination.

2.0 EVALUATION

The staff has reviewed the proposed changes submitted by the licensee as follows:

NOTE: Strikeouts denote deletions and shaded portions denote additions.

2.1 Revision to Existing T/S Section 3.8.1.1 Action Statements a,b,c,e and f

Revised Action a: With one offsite circuit of the above-required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. ~~If either diesel generator has not been successfully tested within the past 24 hours, demonstrate its OPERABILITY by performing Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 for each such diesel generator, separately, within 24 hours unless the diesel generator is already operating.~~ Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Revised Action b: With either diesel generator inoperable, demonstrate the OPERABILITY of the above required A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. ~~If the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirements 4.8.1.1.2.a.4 g.1 and 4.8.1.1.2.a.5 within 24 hours*#, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated.~~ Restore the inoperable diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD Shutdown within the following 30 hours.

Revised Action c: With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. offsite source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter, and, if the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirements 4.8.1.1.2.a.4 g.1 and 4.8.1.1.2.a.5 within 8 hours*, unless the OPERABLE diesel generator is already operating#, or the absence of any potential common mode failure for the remaining diesel generator is demonstrated. Restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore the other A.C. power source (offsite circuit or diesel generator) to OPERABLE status in accordance with the provisions of 3.8.1.1, ACTION Statement a or b, as appropriate, with the time requirement of that ACTION Statement based on the time of initial loss of the remaining inoperable A.C. power source. A successful test of diesel generator OPERABILITY per Surveillance Requirements 4.8.1.1.2.a.4 g.1 and 4.8.1.1.2.a.5 performed under the ACTION Statement for an OPERABLE diesel generator or a restored to OPERABLE diesel generator satisfies the diesel generator test requirement of ACTION Statement a ~~or~~ b.

Revised Action e: With two of the above required offsite A.C. circuits inoperable, ~~demonstrate the OPERABILITY of two diesel generators separately by performing the requirements of Specification 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 within 8 hours#, unless the diesel generators are already operating,~~ restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. Following restoration of one offsite source, follow ACTION Statement a with the time requirement of that ACTION Statement based on the time of the initial loss of the remaining inoperable offsite a.c. circuit. ~~A successful test(s) of diesel OPERABILITY per Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 performed under this ACTION Statement for the OPERABLE diesels satisfies the diesel generator test requirement for ACTION Statement a.~~

Revised Action f: With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing the requirements of Specification 4.8.1.1.1.a. within 1 hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Following restoration of one diesel generator unit, follow ACTION Statement b with the time requirement of that ACTION Statement based on the time of initial loss of the remaining inoperable diesel generator. A successful test of diesel OPERABILITY per Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 performed under this ACTION Statement for a restored to OPERABLE diesel satisfies the diesel generator test requirements of ACTION Statement b.

These proposed changes are based on the recommendations of NUREG-1366 which state that when one EDG is inoperable due to causes other than preplanned preventive maintenance, an inoperable support system, or an independently testable component; testing of the remaining EDGs should be limited to those cases where the cause for inoperability has not been conclusively demonstrated to preclude the potential for a common mode failure. Therefore, testing of the remaining EDGs occurs only when the cause for inoperability could affect the remaining EDGs. This change also eliminates the need to test the EDGs in the event of an inoperable offsite circuit(s). NRC Information Notice 84-69 warns that disturbances on the offsite source can adversely affect EDG reliability when an EDG is operated in parallel with the offsite sources. Therefore, EDG availability is potentially lessened by requiring a demonstration of operability which connects the EDG to the same grid being supplied by offsite AC power. The deletion of the TS requirement to start and load operable EDGs when an offsite AC source becomes inoperable does not increase the probability that the operable EDGs will be unable to perform their safety function. Therefore, in accordance with GL 93-05, Item 10.1, which is based on the recommendations of NUREG 1366, the licensee is requesting that Vogtle Units 1&2 TS be amended to delete the requirement to conduct operability testing of the EDGs when one or both offsite AC sources become inoperable. The staff finds the above changes to be consistent with GL 93-05 and acceptable.

2.2 Revision to Existing S/R Section 4.8.1.1.2.a.4

Revised S/R 4.8.1.1.2.a.4: Verify the diesel starts and that the ~~accelerates to at least 440 RPM with generator voltage and frequency are at 4160 + 170, -135 volts and 60 ± 1.2 Hz, within 11.4 seconds* after the start signal.~~ The diesel generator shall be started for this test by using one of the following Signals:

- a) Manual, or
- b) Simulated loss-of-offsite power by itself, or
- c) Simulated loss-of-offsite power in conjunction with an ESF Actuation test signal, or
- d) An ESF Actuation test signal by itself.

The proposed change allows for routine monthly testing by gradually accelerating the EDG to operating speed as opposed to requiring the EDG to attain rated voltage and frequency within 11.4 seconds. The licensee is replacing the governors on the EDGs with a model that will give the EDG units slow start capability. However, when the EDGs are in standby for emergency operation, or when one EDG is inoperable and the remaining operable EDG must be tested pursuant to the action statement, they will continue to fast start in accordance with their emergency function. NUREG-1366 states, in part, that fast starting has the potential to accelerate the degradation of EDGs. Also, R.G. 1.9, Revision 3, Section 2.2.1, states, in part, that for these start tests the emergency diesel generator can be slow started and reach rated speed on a prescribed schedule that is selected to minimize stress and wear. This change is consistent with the recommendations of NUREG-1366 and R.G. 1.9, Revision 3. The staff finds this change to be acceptable.

2.3 Revision to Existing S/R Section 4.8.1.1.2.g.2

Revised S/R 4.8.1.1.2.g.2: Verifying the generator is synchronized, loaded to an indicated value of ~~6100-7000 KW*** in less than or equal to 60 seconds, and operates with a load of 6800-7000 KW,*** and operates at this loaded condition~~ for at least 60 minutes. This test, if it is performed so it coincides with the testing required by Surveillance Requirement 4.8.1.1.2.a.5, may also serve to concurrently meet those requirements as well.

The proposed change allows the EDG to be loaded gradually to 6800-7000 kW rather than requiring the EDG to be loaded to 6100-7000 kW in less than or equal to 60 seconds. R.G. 1.9, Revision 3, Section 2.2.2, states, in part, that the loading and unloading of an emergency diesel generator during this test should be gradual and based on a prescribed schedule that is selected to minimize stress and wear. Also, NUREG-1366 states, in part, that fast loading during surveillance testing is the most significant cause of accelerated degradation of EDGs. In accordance with GL 93-05, the licensee is requesting that the Vogtle Units 1 & 2 TS be

amended to delete the fast loading requirements and allow gradual loading for all surveillance requirements, with the exception of the loss of offsite power tests that are performed with and without an ESF signal once each refueling, be performed by gradual loading in accordance with the manufacturer's recommendations. This change is consistent with R.G. 1.9, Revision 3, and GL 93-05 which is based on the recommendations of NUREG-1366. The staff finds this change to be acceptable.

2.4 Revision to Existing S/R Section 4.8.1.1.2.h

Revised S/R 4.8.1.1.2.h.7: Verifying the diesel generator operates for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to an indicated 7600 to 7700 KW,** and during the remaining 22 hours of this test, the diesel generator shall be loaded to an indicated 6800-7000 KW.** The generator voltage and frequency shall be 4160 + 170, -135 volts and 60 ± 1.2 Hz within 11.4 seconds after the start signal; the steady-state generator voltage and frequency shall be 4160 + 170, -410 volts and 60 ± 1.2 Hz during this test.# ~~Within 5 minutes after completing this 24 hour test, perform Specification 4.8.1.1.2a.4;##~~

Add New S/R 4.8.1.1.2.h.8: Verifying the diesel generator starts and that the generator voltage and frequency are 4160 + 170, -135 volts and 60 ± 1.2 Hz within 11.4 seconds. This surveillance shall be performed within 5 minutes of stopping the diesel generator after having operated for a minimum of 2 hours loaded to an indicated 6800 - 7000 Kw. Momentary transients outside of the load range do not invalidate this test.

The proposed change to S/R 4.8.1.1.2.h.7 separates the 24-hour endurance run from the hot restart test. As a result, new S/R 4.8.1.1.2.h.8 would be created to require the hot restart test. The purpose of the hot restart test is to ensure that the EDG does not in any way have impaired performance following operation at full load or equilibrium temperature. In order to ensure that the EDG is at full load equilibrium temperature for the hot restart test, the new SR would require that the EDG be operated for a minimum of 2 hours at a load of 6800-7000 Kw. Within 5 minutes of shutdown, the EDG would be restarted and required to attain rated voltage and frequency within 11.4 seconds. Separating these two required tests gives plant operations added flexibility in scheduling these tests and prevents them from becoming the source of critical path complications during outages. Also, NUREG-1366 states that "There is no safety reason for performing a startup of a diesel within 5 minutes of the 24 hour test run as is required by Technical Specifications." The proposed new SR would continue to ensure the hot restart capability of the EDGs. This change is consistent with the recommendations of NUREG-1366 and is acceptable.

Revisions to Existing S/R Sections 4.8.1.1.2.h.8, 9, 10, 11, and 12: These S/Rs would be renumbered to accommodate the addition of new S/R 4.8.1.1.2.h.8. Footnote ## would be deleted since it would be no longer required. These proposed changes are administrative in nature and acceptable.

2.5 Revision to Existing Bases 3/4.8.1, 3/4.8.2, and 3/4.8.3

Revised Bases 3/4.8.1, 3/4.8.2, and 3/4.8.3: The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are based on the recommendations of Regulatory Guides 1.9, Revision 2, "Selection of Diesel Generator Set Capacity for Standby Power Supplies," December, 1979; 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electrical Power Systems at Nuclear Power Plants," Revision 1, August 1977 Design, Qualification, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electrical Power Systems at Nuclear Power Plants," July 1993; and 1.137, "Fuel-Oil Systems for Standby Diesel Generators," Revision 1, October 1979, Appendix A to Generic Letter 84-15, and Generic Letter 83-26, "Clarification of Surveillance Requirements for Diesel Fuel Impurity Level Tests;" and Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation."

The proposed changes are administrative in nature and are consistent with the above T/S changes. The staff finds these changes to be acceptable.

2.6 SUMMARY

The licensee's proposed changes are based on the recommendations of R.G. 1.9, Revision 3, NUREG-1366 and GL 93-05. These changes are expected to result in improvements in diesel generator testing and reduced degradation due to excessive testing. As such, the proposed changes should result in improved diesel generator reliability, thereby providing additional assurance that the diesel generators will be capable of performing their safety function. Therefore, the proposed changes will not significantly increase the probability or consequences of any accident previously evaluated. The staff finds these proposed changes to be 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 39590 dated August 3, 1994). 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: C. Thomas EELB/DE
O. Chopra EELB/DE

Date: September 21, 1994