

May 2, 1994

Docket Nos. 50-424
and 50-425

Distribution

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

~~██████████~~
PDII-3 R/F
NRC/Local PDRs
S.Varga
D.Matthews
CMorris
L.Berry
OGC 15B18
D.Hood

D.Hagan MNBB4702
G.Hill(4) P1-37
C.Grimes 11F23
ACRS(10) P-315
PA 2G5
OC/LFMB MNBB11104
J.Johnson (Acting), RII
S.Saba

Dear Mr. McCoy:

SUBJECT: ISSUANCE OF AMENDMENTS - VOGTLE NUCLEAR GENERATING PLANT, UNITS 1 AND 2 (TAC NOS. M88302 AND M88303)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 71 to Facility Operating License NPF-68 and Amendment No. 50 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 November 19, 1993, as revised March 31, 1994.

The amendments revise surveillance requirements for station batteries based on draft IEEE Standard 450-1992, "Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations."

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,

/s/

Darl S. Hood, Sr. Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 71 to NPF-68
2. Amendment No. 50 to NPF-81
3. Safety Evaluation

cc w/enclosures:
See next page

OFC	PDII-3/LA	PDII-3/PM	BC:EELB:DE	OGC	PD
NAME	LGBerry	DSHood	CBerlinger		DMatthews
DATE	04/ 5 /94	04/ 6 /94	04/ 14 /94	04/25 /94	05 2 /94

OFFICIAL RECORD COPY
FILE NAME: G:\VOGTLE\VOG88302.AMD

000018

9405100234 940502
PDR ADOCK 05000424
P PDR

NRC FILE CENTER COPY

CP-1
DFE 1



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

May 2, 1994

Docket Nos. 50-424
and 50-425

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

Dear Mr. McCoy:

SUBJECT: ISSUANCE OF AMENDMENTS - VOGTLE ELECTRIC GENERATING PLANT, UNITS 1
AND 2 (TAC NOS. M88302 AND M88303)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 71 to Facility Operating License NPF-68 and Amendment No. 50 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 November 19, 1993, as revised March 31, 1994.

The amendments revise surveillance requirements for station batteries based on draft IEEE Standard 450-1992, "Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations."

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,

A handwritten signature in cursive script, appearing to read "Darl S. Hood".

Darl S. Hood, Senior Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 71 to NPF-68
2. Amendment No. 50 to NPF-81
3. Safety Evaluation

cc w/enclosures:
See next page

Mr. C. K. McCoy
Georgia Power Company

Vogle 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, Vogle 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. Marvin Sinkule, Chief
Project Branch #3
U. S. Nuclear Regulatory Commission
101 Marietta Street, NW. Suite 2900
Atlanta, Georgia 30323

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

Mr. Dan H. Smith, Vice President
Power Supply Operations
Oglethorpe Power Corporation
2100 East Exchange Place
Tucker, Georgia 30085-1349

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

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

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

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

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



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. 71
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 November 19, 1993, as revised March 31, 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.

9405100238 940502
PDR ADOCK 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. 71 , 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.

FOR THE NUCLEAR REGULATORY COMMISSION



David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: May 2, 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. 50
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 November 19, 1993, as revised March 31, 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. 50 , 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.

FOR THE NUCLEAR REGULATORY COMMISSION



David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: May 2, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 71

FACILITY OPERATING LICENSE NO. NPF-68

DOCKET NO. 50-424

AND

TO LICENSE AMENDMENT NO. 50

FACILITY OPERATING LICENSE NO. NPF-81

DOCKET NO. 50-425

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

Remove Page

Insert Page

3/4 8-12

3/4 8-12

3/4 8-13

3/4 8-13

3/4 8-13a

B 3/4 8-2

B 3/4 8-2

D. C. SOURCES

SURVEILLANCE REQUIREMENTS (Continued)

- b. At least once per 92 days and within 7 days after a battery discharge with battery terminal voltage below 109.7 volts for trains A&B, 108.3 volts for train C, and 106.2 volts for train D at a battery room minimum temperature of 70°F, or battery overcharge with battery terminal voltage above 140 volts, by verifying that:
 - 1) The parameters in Table 4.8-2 meet the Category B limits,
 - 2) There is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than 50×10^{-6} ohm, and
 - 3) The average electrolyte temperature of twelve connected cells is above 70°F.
- c. At least once per 18 months by verifying that:
 - 1) The cells, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration,
 - 2) The cell-to-cell and terminal connections are clean, tight, and coated with anticorrosion material,
 - 3) The resistance of each cell-to-cell and terminal connection is less than or equal to 50×10^{-6} ohm, and
 - 4) The battery charger will supply at least 400 amperes for system A and B, 300 amperes for system C, and 200 amperes for system D at 125 volts nominally for at least 8 hours.
- d. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test;
- e. By verifying during shutdown, that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test, in accordance with Table 4.8-3.

**TABLE 4.8-2
BATTERY SURVEILLANCE REQUIREMENTS**

PARAMETER	CATEGORY A ⁽¹⁾		CATEGORY B ⁽²⁾	
	LIMITS FOR EACH DESIGNATED PILOT CELL	LIMITS FOR EACH CONNECTED CELL	LIMITS FOR EACH CONNECTED CELL	ALLOWABLE ⁽³⁾ VALUE FOR EACH CONNECTED CELL
Electrolyte Level	>Minimum level indication mark, and < 1/4" above maximum level indication mark	>Minimum level indication mark, and < 1/4" above maximum level indication mark	>Minimum level indication mark, and < 1/4" above maximum level indication mark	Above top of plates, and not overflowing
Float Voltage	≥ 2.13 volts	≥ 2.13 volts ⁽⁶⁾	≥ 2.13 volts ⁽⁶⁾	> 2.07 volts
Specific Gravity ⁽⁴⁾	≥ 1.195(5)	≥ 1.190	Average of all connected cells > 1.200	Not more than 0.020 below the average of all connected cells Average of all connected cells ≥ 1.190 ⁽⁵⁾

TABLE NOTATIONS

- (1) For any Category A parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that within 24 hours all the Category B measurements are taken and found to be within their allowable values, and provided all Category A and B parameter(s) are restored to within limits within the next 6 days.
- (2) For any Category B parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that the Category B parameters are within their allowable values and provided the Category B parameter(s) are restored to within limits within 7 days.
- (3) Any Category B parameter not within its allowable value indicates an inoperable battery.
- (4) Corrected for electrolyte temperature (reference temperature of 77°F) and level.
- (5) Or battery charging current is less than 2 amps when on float charge.
- (6) Corrected for average electrolyte temperature.

Table 4.8-3

Performance Discharge Test Surveillance Requirements

Battery Life	Battery Condition	Performance Test Frequency		
		At Least Once Per 60 Months	At Least Once Per 24 Months	At Least Once Per 12 Months
Battery Life $\leq 85\%$ of Expected Service Life	No Degradation ⁽¹⁾	X ⁽²⁾		
	Degradation ⁽¹⁾			X ⁽³⁾
Battery Life $> 85\%$ of Expected Service Life ⁽⁵⁾	No Degradation ⁽¹⁾		X ⁽⁴⁾	

1. Degradation is defined as a decrease in battery capacity of more than 10% of capacity from its previous performance test, or the battery capacity is less than 90% of the manufacturer's rating.
2. Once per 60-month interval, this performance discharge test may be performed in lieu of the battery service test required by Specification 4.8.2.1d.
3. The battery can be restored to a 60-month test interval by cell replacement if performance test results indicate that cell replacement will restore the battery to a minimum of 90% of rated capacity with no degradation. Replacement cells must be tested to demonstrate a minimum capacity of 100% of the manufacturer's rating prior to installation.
4. Once per 24-month interval, a modified performance discharge test may be performed in lieu of the battery service test required by Specification 4.8.2.1d. A modified performance discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle).
5. When battery life is greater than 85% of the expected life of the battery and degradation is indicated, cell replacement shall not be used to restore the capability of the battery for more than one year, and the battery shall be replaced within one year of the date of the discovery of the cell degradation.

BASESA.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

The Surveillance Requirement for demonstrating the OPERABILITY of the station batteries are based on the recommendations of Regulatory Guide 1.129, "Maintenance Testing and Replacement of Large Lead Storage Batteries for Nuclear Power Plants," February 1978, and IEEE Std 450-1975, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations," and 484-1975 "Recommended Practice for Installation Design and Installation of Lead Storage Batteries for Generating Stations and Substations."

Verifying average electrolyte temperature above the minimum for which the battery was sized, total battery terminal voltage on float charge, connection resistance values, and the performance of battery service and discharge tests ensures the effectiveness of the charging system, the ability to handle high discharge rates, and compares the battery capacity at that time with the rated capacity.

Table 4.8-2 specifies the normal limits for each designated pilot cell and each connected cell for electrolyte level, float voltage, and specific gravity. The limits for the designated pilot cells float voltage and specific gravity, greater than 2.13 volts and 0.015 below the manufacturer's full charge specific gravity or a battery charger current that had stabilized at a low value, is characteristic of a charged cell with adequate capacity. The normal limits for each connected cell for float voltage and specific gravity, greater than 2.13 volts and not more than 0.020 below the manufacturer's full charge specific gravity with an average specific gravity of all the connected cells not more than 0.010 below the manufacturer's full charge specific gravity, ensures the OPERABILITY and capability of the battery.

Operation with a battery cell's parameter outside the normal limit but within the allowable value specified in Table 4.8-2 is permitted for up to 7 days. During this 7-day period: (1) the allowable values for electrolyte level ensures no physical damage to the plates with an adequate electron transfer capability; (2) the allowable value for the average specific gravity of all the cells, not more than 0.020 below the manufacturer's recommended full charge specific gravity, ensures that the decrease in rating will be less than the safety margin provided in sizing; (3) the allowable value for an individual cell's specific gravity, ensures that an individual cell's specific gravity will not be more than 0.040 below the manufacturer's full charge specific gravity and that the overall capability of the battery will be maintained within an acceptable limit; and (4) the allowable value for an individual cell's float voltage, greater than 2.07 volts, ensures the battery's capability to perform its design function.



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 71 TO FACILITY OPERATING LICENSE NPF-68
AND AMENDMENT NO. 50 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 November 19, 1993, as revised March 31, 1994, Georgia Power Company, et al. (the licensee) proposed license amendments to make two changes to the Technical Specifications (TS) for Vogtle Electric Generating Plant (Vogtle), Units 1 and 2. These changes would, as recommended by the Nuclear Regulatory Commission (NRC), incorporate surveillance procedures in compliance with draft Institute of Electrical and Electronic Engineers (IEEE) Standard 450-1992, "Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Batteries for Generating Stations and Substations."

The first proposed change would revise the plant battery maintenance and testing practices in the TSs, particularly the performance discharge test (PDT) schedule.

The second proposed change would reduce the minimum cell float voltage specified in TS Table 4.8-2, "Battery Surveillance Requirements," and in associated TS Bases 3/4.8.1, 3/4.8.2, and 3/4.8.3, "A.C. Sources, D.C. Sources, and Onsite Power Distribution," from 2.10 volts to 2.07 volts.

The licensee's revised submittal of March 31, 1994, changed the initial request to provide increased conformance to an associated draft IEEE Standard 450 maintenance and testing practice. The revision imposes restrictions on cell replacements for degraded batteries that are in late stages of service life. These restrictions were requested by the NRC staff and do not affect the NRC staff's conclusions of no significant hazards considerations published in the Federal Register (58 FR 67847) on December 22, 1993.

2.0 EVALUATION

2.1 Battery Maintenance and Testing

The first proposed change would, in part, delete TS 4.8.2.1.f, which currently requires that each 125-volt battery bank and one associated charger be demonstrated OPERABLE:

- f. At least once per 18 months, during shutdown, by giving performance discharge tests (PDT) of battery capacity to any

battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating.

The present TS 4.8.2.1.f would be replaced by a new Table 4.8-3, "Performance Discharge Test Surveillance Requirements." The new Table 4.8-3 would establish a schedule for PDTs. The intervals between tests would depend upon the remaining life of the battery and upon the degradation detected. As used here and in the TS, degradation is defined as a drop of more than 10% in battery capacity from the previous test, or a battery capacity less than 90% of the battery's specified capacity.

A consequence of comparing the latest test result with the preceding test result, rather than with some kind of average of earlier tests, is that the measure of the degradation experienced is reduced. However, because of the 90% lower limit to battery capacity also specified in the TS new Table 4.8-3, no significant change in the schedule of PDTs would result.

A further part of this first proposed change would alter TS 4.8.2.1.e, which currently requires that each 125-volt battery bank and one associated charger be demonstrated OPERABLE:

- e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Once per 60-month interval this performance discharge test may be performed in lieu of the battery service test required by Specification 4.8.2.1.d.

The battery service test (BST) is currently required to be made every 18 months.

The proposed TS replacement would read:

- e. By verifying during shutdown, that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test, in accordance with Table 4.8-3.

The change from 60 months to "during shutdown" is a reduction in the interval between PDTs and, therefore, does not increase the risk of battery failure. The normal interval between shutdown of each Vogtle unit is 18 months.

The change with respect to the deletion of the BST is not in the direction of reduced risk. Rather, the basis for accepting it is that (1) there is no significant increase in risk of battery failure, and (2) the deletion of a BST is consistent with other recent TS battery surveillance changes.

However, the NRC staff currently recommends that when a licensee proposes to eliminate a BST, it should be replaced with a modified PDT; that is, a PDT

that starts with a maximum discharge rate period, that is followed by the PDT constant current test. A generic modified PDT consists of a 1-minute discharge at the maximum rate specified for the battery, followed by the PDT. Currents during both segments of the modified PDT are greater than or equal to the design-basis duty cycle currents for the battery.

A modified PDT is a test of the capability of the battery to provide a high current, short duration load at greater than the minimum design voltage, followed by a test of the capability of the battery to provide sufficient current at above the minimum design voltage for the duration of the design cycle.

The licensee proposes to add a note to TS 4.8.2.1.d that would allow a modified PDT in lieu of the BST. The note is similar to the present note, which allows the PDT to be substituted for the BST at 60-month intervals. The added note would ensure that the battery would be capable of supplying the high current early loads, even when the battery has reached or exceeded 85% of its expected life.

As noted in Section 7 of IEEE Standard 450-1993, "Battery Replacement Criteria," replacement cells are not usually recommended as the battery nears its end of life. The NRC staff requested that the licensee revise Footnote 5 of new Table 4.8-3 as proposed November 19, 1993, consider appropriate limitations upon cell replacements late in battery life. On March 31, 1994, the licensee revised the proposed footnote to state that:

5. When battery life is greater than 85% of the expected life of the battery and degradation is indicated, cell replacement shall not be used to restore the capability of the battery for more than one year, and the battery shall be replaced within one year of the date of the discovery of the cell degradation.

The NRC staff finds the revised Footnote 5 to adequately limit cell replacement for degraded batteries late in service life, and to adequately address the recommendation of IEEE Standard 450-1993, Section 7. The revised Footnote 5 is, therefore, acceptable.

The NRC staff finds that the proposed changes in battery maintenance and testing are consistent with draft IEEE Standard 450-1992; with the improved "Standard Technical Specifications for Westinghouse Plants (NUREG-1431)," and with recent license amendments issued by the NRC. The NRC accepts the research discussed in NUREG/CR-4096, "Test Series 3: Seismic Fragility Tests of Naturally-Aged Class 1-E C&D LCU-13 Battery Cells" and NUREG/CR-5448, "Aging Evaluation of Class 1-E Batteries: Seismic Testing"). The research concluded that batteries maintained and operated in accordance with IEEE Standard 450-1980 should last their expected life time. The research also concluded that the tests provided in the subject standard and the NUREGs could ensure the capacity and seismic capability of the plant batteries. The proposed TS changes for battery maintenance and testing are, therefore, acceptable.

2.2 Cell Float Voltage

The minimum Category B cell float voltage (CFV) of 2.10 volts in the present TS Table 4.8-2 would be replaced by a minimum Category B CFV of 2.07 volts. The basis for the change is that the battery manufacturer has said that the CFV of 2.10 volts is unnecessarily high and that 2.07 volts adequately ensures that the battery is free of internal cell problems that would necessitate cell replacement.

The licensee also cites Appendix C1 of three IEEE Standards: (1) 450-1980, (2) 450-1987, and (3) draft 450-1992. The same appendix in all three standards, states:

A cell voltage of 2.07 V or below under float conditions and not caused by elevated temperature of the cell indicates internal cell problems and may require cell replacement.

A minimum CFV of 2.07 volts is also consistent with the new Standard Technical Specifications, NUREG-1431, Table 3.8.6-1, Category C. Category C voltages ensure that the battery has sufficient capacity, plus margin.

Although the reduction from 2.10 volts to 2.07 volts for the minimum allowed CFV is a reduction in battery capacity margin, it is the combined opinions of the battery manufacturer, the IEEE, and the NRC staff, through the recommendations of NUREG-1431, that it is not a significant reduction. As long as the CFV is greater than 2.07 volts, it is not by itself indication of internal cell degradation.

Moreover, the NRC staff finds the proposed change to be consistent with the cited IEEE standards and the "Standard Technical Specifications for Westinghouse Plants" (NUREG-1431). It is also consistent with changes the NRC staff has previously approved on other nuclear power plants such as Crystal River. Therefore, the proposed change to the cell float voltage is 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 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

(58 FR 67847, dated December 22, 1993). 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 Contributors: C. Morris
D. Hood

Date: May 2, 1994