

December 20, 1988

Docket No.: 50-425

Mr. W. G. Hairston, III
Senior Vice President -
Nuclear Operations
Georgia Power Company
P. O. Box 1295
Birmingham, Alabama 35201

Dear Mr. Hairston:

SUBJECT: DRAFT VOGTLE UNIT 2 LOW POWER LICENSE

Georgia Power Company has informed the NRC that Vogtle Unit 2 will be ready for a low power license on February 9, 1989. Based on that date, enclosed is a draft copy of the low power license under NRC consideration for issuance to Vogtle Unit 2. If you have any comments on the draft license, provide them in writing to us by January 6, 1989.

Sincerely,

151

Jon B. Hopkins, Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosure:
See next page

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VOGTLE PLANT FILE

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

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Sincerely,

A handwritten signature in cursive script that reads "Jon B. Hopkins".

Jon B. Hopkins, Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosure:
See next page

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Georgia Power Company

Vogtle Electric Generating Plant

cc:

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Burke County Commission
Waynesboro, Georgia 30830

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Atlanta, Georgia 30334

DRAFT

GEORGIA POWER COMPANY
OGLETHORPE POWER CORPORATION
MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA
CITY OF DALTON, GEORGIA
DOCKET NO. 50-425
VOGTLE ELECTRIC GENERATING PLANT, UNIT 2
FACILITY OPERATING LICENSE

License No. NPF-

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for license filed by the Georgia Power Company (GPC)* acting for itself, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia, (the licensees) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I; and all required notifications to other agencies or bodies have been duly made;
 - B. Construction of the Vogtle Electric Generating Plant, Unit 2 (the facility) has been substantially completed in conformity with Construction Permit No. CPPR-109 and the application, as amended, the provisions of the Act and the regulations of the Commission;
 - C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission (except as exempted from compliance in Section 2.D. below);
 - D. There is reasonable assurance: (i) that the activities authorized by this operating license 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 (except as exempted from compliance in Section 2.D. below);
 - E. Georgia Power Company is technically qualified to engage in the activities authorized by this license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;

* Georgia Power Company is authorized to act as agent for the Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia, and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

DRAFT

- F. The licensees have satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
 - G. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;
 - H. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of this Facility Operating License No. NPF- , subject to the conditions for protection of the environment set forth in the Environmental Protection Plan attached as Appendix B, is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied;
 - I. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40, and 70.
2. Based on the foregoing findings and the Partial Initial Decision and the Concluding Partial Initial Decision issued by the Atomic Safety and Licensing Board on August 27 and December 23, 1986, respectively, regarding this facility and satisfaction of conditions therein imposed, Facility Operating License No. NPF- , is hereby issued to the Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia to read as follows:
- A. This license applies to the Vogtle Electric Generating Plant, Unit 2, a pressurized water reactor and associated equipment (the facility) owned by GPC, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia. The facility is located on the licensees' site in Burke County, Georgia, on the west bank of the Savannah River approximately 25 miles south of Augusta, Georgia, and is described in Georgia Power Company's Final Safety Analysis Report, as supplemented and amended, and in its Environmental Report, as supplemented and amended;
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:
 - (1) GPC, pursuant to Section 103 of the Act and 10 CFR Part 50, to possess, use, and operate the facility at the designated location in Burke County, Georgia, in accordance with the procedures and limitations set forth in this license;
 - (2) Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia, pursuant to the Act and 10 CFR Part 50, to possess the facility at the designated location in Burke County, Georgia, in accordance with the procedures and limitations set forth in this license;

- (3) GPC, pursuant to the Act and 10 CFR Part 70, to receive, possess, and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
 - (4) GPC, pursuant to the Act and 10 CFR Parts 30, 40 and 70 to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
 - (5) GPC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;
 - (6) GPC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of Vogtle Electric Generating Plant, Units 1 and 2.
- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect, and is subject to the additional conditions specified or incorporated below.

(1) Maximum Power Level

GPC is authorized to operate the facility at reactor core power levels not in excess of 3411 megawatts thermal (100 percent power) in accordance with the conditions specified herein. Pending Commission approval, this license is restricted to power levels not to exceed 5 percent of full power (170 megawatts thermal).

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A 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) Initial Startup Test Program (Section 14, SER)*

Any changes to the Initial Test Program described in Section 14 of the FSAR made in accordance with the provisions of 10 CFR 50.59 shall be reported in accordance with 50.59(b) within one month of such change.

(4) Transamerica Delaval, Inc. (TDI) Diesel Generators

GPC shall implement the TDI diesel generator requirements as specified in Attachment 1. Attachment 1 is hereby incorporated into this license.

(5) NUREG-0737 Items

a. Integrity of Systems Outside Containment Likely to Contain Radioactive Material (Section 11.5.3, SER and SSER 3)

GPC shall perform leak rate measurements of those systems listed in Section 11.5.3 of SSER 3 to ensure system integrity such that these systems can be relied upon in the event of an accident. These measurements must be made in accordance with NUREG-0737, Item III.D.1.1 and submitted to the NRC staff, before exceeding 5% power, for review and approval.

b. Compliance with NUREG-0737, Item II.F.2 (Section 4.4.8, SER and SSERs 1, 4 and 8)

In accordance with NUREG-0737, Item II.F.2, GPC shall submit the proposed reactor vessel level instrumentation system (RVLIS) report by 1989.

- D. The facility requires exemptions from certain requirements of 10 CFR Part 50 and 10 CFR Part 70. These include (a) an exemption from the requirements of 10 CFR 70.24 for two criticality monitors around the fuel storage area, (b) an exemption from the requirements of Paragraph III.D.2(b)(ii) of Appendix J of 10 CFR Part 50, the testing of containment air locks at times when containment integrity is not required, (c) an exemption from the schedule requirements of 10 CFR 50.33(k)(1) related to availability of funds for decommissioning the facility and (d) an exemption from the requirements of 10 CFR 50.54(w) related to property insurance. The special circumstances regarding exemptions b, c, and d are identified in Sections 6.2.6, 1.10, and 1.11 of SSER 8, respectively.

* The parenthetical notation following the title of some license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

An exemption was previously granted pursuant to 10 CFR 70.24. The exemption was granted with NRC materials license No. SNM-1981, issued July 13, 1988, and relieved GPC from the requirement of having a criticality alarm system. GPC is hereby exempted from the criticality alarm system provision of 10 CFR 70.24 so far as this section applies to the storage of fuel assemblies held under this license.

These exemptions are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security. The exemptions in items b, c, and d above are granted pursuant to 10 CFR 50.12. With these exemptions, the facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission.

- E. GPC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Alvin W. Vogtle Nuclear Plant Physical Security Plan," with revisions submitted through January 6, 1988; "Alvin W. Vogtle Nuclear Plant Guard Training and Qualification Plan," with revisions submitted through June 2, 1986; and "Alvin W. Vogtle Nuclear Plant Safeguards Contingency Plan," with revisions submitted through January 6, 1988. Changes made in accordance with 10 CFR 73.55 shall be implemented in accordance with the schedule set forth therein.
- F. GPC shall comply with the antitrust conditions delineated in Appendix C to this license.
- G. GPC shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility, as approved in the SER (NUREG-1137) through Supplement 8 subject to the following provision:
- GPC may make changes to the approved fire protection program without prior approval of the Commission, only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.
- H. Reporting to the Commission

Except as otherwise provided in the Technical Specifications or Environmental Protection Plan, GPC shall report any violations of the requirements contained in Section 2.C. of this license in the

following manner: initial notification shall be made within twenty-four (24) hours to the NRC Operations Center via the Emergency Notification System with written follow-up within 30 days in accordance with the procedures described in 10 CFR 50.73(b), (c), and (e).

- I. The licensees shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.
- J. This license is effective as of the date of issuance and shall expire at midnight on .

FOR THE NUCLEAR REGULATORY COMMISSION

Thomas E. Murley, Director
Office of Nuclear Reactor Regulation

Enclosures:

1. Attachment 1 - TDI Requirements
2. Appendix A - Technical Specifications
3. Appendix B - Environmental Protection Plan
4. Appendix C - Antitrust Conditions

Date of Issuance:

ATTACHMENT 1 TO LICENSE NPF-
TDI DIESEL ENGINE REQUIREMENTS

1. Changes to the maintenance and surveillance programs for the TDI diesel engines, as identified in Section 9.5.4.1 of Supplement 4 to the Vogtle Electric Generating Plant Safety Evaluation Report, shall be subject to the provisions of 10 CFR 50.59.

The frequency of the major engine overhauls referred to in the license conditions below shall be consistent with Section IV.1. "Overhaul Frequency" in Revision 2 of Appendix II of the Design Review/Quality Revalidation report which was transmitted by letter dated May 1, 1986, from J. George, Owners Group, to H. Denton, NRC.

2. Connecting rod assemblies shall be subjected to the following inspections at each major engine overhaul:
 - a. The surfaces of the rack teeth shall be inspected for signs of fretting. If fretting has occurred, it shall be subject to an engineering evaluation for appropriate corrective action.
 - b. All connecting-rod bolts shall be lubricated in accordance with the engine manufacturer's instructions and torqued to the specifications of the manufacturer. The lengths of the two pairs of bolts above the crankpin shall be measured ultrasonically pre- and post-tensioning.
 - c. The lengths of the two pairs of bolts above the crankpin shall be measured ultrasonically prior to detensioning and disassembly of the bolts. If bolt tension is less than 93% of the value at installation, the cause shall be determined, appropriate corrective action shall be taken, and the interval between checks of bolt tension shall be re-evaluated.
 - d. All connecting-rod bolts shall be visually inspected for thread damage (e.g. galling), and the two pairs of connecting rod bolts above the crank pin shall be inspected by magnetic particle testing (MT) to verify the continued absence of cracking. All washers used with the bolts shall be examined visually for signs of galling or cracking, and replaced if damaged.
 - e. Visual inspection shall be performed of all external surfaces of the link rod box to verify the absence of any signs of service induced distress.
 - f. All of the bolt holes in the link rod box shall be inspected for thread damage (e.g., galling) or other signs of abnormalities. In addition, the bolt holes subject to the highest stresses (i.e., the pair immediately above the crankpin) shall be examined with an appropriate nondestructive method to verify the continued absence of cracking. Any indications shall be recorded for engineering evaluation and appropriate corrective action.

3. The cylinder blocks shall be subjected to the following inspections at the interval specified in the inspections:
 - a. Cylinder blocks shall be inspected for "ligament" cracks, "stud-to-stud" cracks and "stud-to-end" cracks as defined in a report* by Failure Analysis Associates, Inc. (FaAA) entitled, "Design Review of TDI R-4 and RV-4 Series Emergency Diesel Generator Cylinder Blocks" (FaAA report no. FaAA-84-9-11.1), dated December 1984. (Note that the FaAA report specifies additional inspections to be performed for blocks with "known" or "assumed" ligament cracks). The inspection intervals (i.e., frequency) shall not exceed the intervals calculated using the cumulative damage index model in the subject FaAA report. In addition, the inspection method shall be consistent with or equivalent to those identified in the subject FaAA report.
 - b. In addition to inspections specified in the aforementioned FaAA report, blocks with "known" or "assumed" ligament cracks (as defined in the FaAA report) shall be inspected at each refueling outage to determine whether or not cracks have initiated on the top surface exposed by the removal of two or more cylinder heads. This process shall be repeated over several refueling outages until the entire block top has been inspected. Liquid-penetrant testing or a similarly sensitive nondestructive testing technique shall be used to detect cracking, and eddy current shall be used as appropriate to determine the depth of any cracks discovered.
 - c. If inspection reveals cracks in the cylinder blocks between stud holes of adjacent cylinders ("stud-to-stud" cracks) or "stud-to-end" cracks, this condition shall be reported promptly to the NRC staff and the affected engine shall be considered inoperable. The engine shall not be restored to "operable" status until the proposed disposition and/or corrective actions have been approved by the NRC staff.
4. The following air roll test shall be performed as specified below, except when the plant is already in an Action Statement of Technical Specification 3/4.8.1, "Electric Power Systems, A.C. Sources":

The engines shall be rolled over with the airstart system and with the cylinder stopcocks open prior to each planned start, unless that start occurs within 4 hours of a shutdown. The engines shall also be rolled over with the airstart system and with the cylinder stopcocks open after 4 hours, but not more than 8 hours after engine shutdown and then rolled over once again approximately 24 hours after each shutdown. (In the event an engine is removed from service for any reason other than the rolling over procedure prior to expiration of the 8-hour or 24-hour periods noted above, that engine need not be rolled over while it is out of service. The licensee shall air roll the engine over with the stopcocks open at the time it is returned to service). The origin of any water

* This report was transmitted to H. Denton, NRC, from C. L. Ray, Jr., TDI Owners Group, by letter dated December 11, 1984.

detected in the cylinder must be determined and any cylinder head which leaks due to a crack shall be replaced. The above air roll test may be discontinued following the first refueling outage subject to the following conditions:

- a. All cylinder heads are Group III heads (i.e., cast after September 1980).
 - b. Quality revalidation inspections, as identified in the Design Review/Quality Revalidation report, have been completed for all cylinder heads.
 - c. Group III heads continue to demonstrate leak-free performance. This should be confirmed with TDI prior to deleting air roll tests.
5. Periodic inspections of the turbochargers shall include the following:
- a. The turbocharger thrust bearings shall be visually inspected for excessive wear after 40 non-primed starts since the previous visual inspection.
 - b. Turbocharger rotor axial clearance shall be measured at each refueling outage to verify compliance with TDI/Elliott specifications. In addition, thrust bearing measurements shall be compared with measurements taken previously to determine a need for further inspection or corrective action.
 - c. Spectrographic engine oil and ferrographic engine oil (wear) analysis shall be performed quarterly to provide early evidence of bearing degradation. Particular attention shall be paid to copper level and particulate size which could signify thrust bearing degradation.