April 7, 1988

Docket No.: 50-425

Mr. George F. Head
Senior Vice President
Georgia Power Company
P.O. Box 4545
Atlanta, GA 30302

Dear Mr. Head:

SUBJECT: VOGTLE UNIT 2 REQUEST FOR ADDITIONAL INFORMATION SPENT FUEL RACKS (TAC 67079)

The NRC staff has commenced its review of the Vogtle Unit 2 spent fuel racks described in the letter submitted December 23, 1987. The NRC staff finds that it needs additional information in order to complete its review. The submittal did not address actions to be taken to maintain occupational dose ALARA or the impact of occupational radiation exposure that will result during and after the modification. You should provide information on occupational radiation exposure, radioactive wastes, accident analyses, potential releases of radioactive materials, and offsite radiological impacts due to the proposed spent fuel racks. Enclosure 1 contains questions regarding these areas. Enclosure 2 contains questions regarding the boraflex material being used. The NRC staff is willing to meet with you to discuss these matters. In order to maintain our review schedule, we request responses within 30 days of receipt of this letter.

The reporting and/or recordkeeping requirements contained in this letter affect fewer than 10 respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,

/S/

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

Enclosures:
As stated

cc:
See next page

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REQUEST FOR ADDITIONAL INFORMATION
VOGTLE 2 SPENT FUEL POOL STORAGE

RPB #1 Provide the following information:

a. Sources in the Spent Fuel Pool Water

Provide a description of fission and corrosion product sources in the spent fuel pool (SFP) water from: (a) introduction of primary coolant into SFP water, (b) movement of fuel from the core into the pool, and (c) defective fuel stored in the pool. Include a listing of the radionuclides and their concentrations (expressed in mCi/mL) expected during normal operations and refueling. The radionuclides of interest should include ^{58}Co, ^{60}Co, ^{134}Cs, and ^{137}Cs.

b. Airborne Radioactive Sources

Provide a description of radioactive materials that may become airborne as a result of failed fuel and evaporation (e.g., ^{85}Kr, and ^{3}H, respectively). The radionuclide description should include calculated or measured concentrations expected during normal operations and during refuelings.

c. Miscellaneous Sources of Exposure

Address the effects of more frequent replacement of demineralizer filters on cumulative dose equivalent if this is a factor that results from the modification.

RPB #2

Dose Rates from Fuel Assemblies, Control Rods, and Burnable Poison Rods

a. Provide a description of the dose rate at the surface of the pool water from the fuel assemblies, control rods, burnable poison rods or any miscellaneous materials that may be stored in the pool. Additionally, provide the dose rate from individual fuel assemblies as they are being placed into the fuel racks. Information relevant to the depth of water shielding the fuel assemblies as they are being transferred into the racks should be specified. If the depth of water shielding over a fuel assembly while it is being transferred to a spent fuel rack is less than 10 feet, or the dose rate 3 feet above the spent fuel pool (SFP) water is greater than 5 mR/hr above ambient radiation levels, then submit a Technical Specification specifying the minimum depth of water shielding over the fuel assembly as it is being transferred to the fuel rack and the measures that will be taken to assure that this minimum depth will not be degraded.

b. Address the dose rate changes at the sides of the pool concrete shield walls, where occupied areas are adjacent to these walls, as a result of the modification. Increasing the capacity of the pool may cause spent fuel assemblies to be relocated close to the concrete walls of the pool, resulting in an increase of radiation levels in occupied areas. Please evaluate this potential problem.

RPB #3

Dose Rates from SFP Water

Provide information on the dose rates at the surface of SFP water resulting from radioactivity in the water. Include: (1) dose rate levels in occupied areas and along the edges and center of the pool and on the fuel handling crane; (2) effects of crud buildup; and (3) based on refueling water activity, the dose rates before, during, and after refueling.

RPB #4

Dose Rates from Airborne Isotopes

Based on the source terms, provide the dose rates from submersion and dose commitments from exposure to the concentration of ^{85}Kr and ^{3}H.

RPB #5

Dose Assessment from Modification Procedures

a. Discuss the manner in which occupational exposure will be kept ALARA during the modification. Include the need for and the manner in which cleaning of the crud on the SFP walls will be performed to reduce exposure rates in the SFP area.

b. Discuss vacuum cleaning of SFP floors if divers are used and the distribution of existing spent fuel stored in racks to allow maximum water shielding to reduce dose rates to divers.

c. Describe plans for clearup of the SFP water to minimize radioactive contamination and to ensure fuel pool clarity and underwater lighting acceptance criteria to help ensure good visibility.

d. Discuss underwater radiation surveys that will be made before any diving operation. These surveys should be performed before or after any fuel movements or movements of any irradiated components stored in the pool.

e. State your intent to equip each diver with a calibrated alarming dosimeter and personnel monitoring dosimeters, which should be checked periodically to ensure that prescribed dose limits are not being exceeded.

f. Discuss any preplanning of work by divers as required.

g. Discuss your provision for surveillance and monitoring of the spent fuel pool work area by Health Physics personnel during the modification.

RPB #6

Provide an estimate of the total man-rem to be received by personnel occupying the spent fuel pool area based on all operations in that area including those resulting from (2), (3), and (5) above. Describe the impact of the spent fuel storage rack modification on these estimates.

cheb # 1

Based on the recent experience pertaining to degradation of Boraflex in spent fuel pools at Quad Cities and Point Beach nuclear power plants, provide justification to demonstrate the continued accepability of Boraflex for application in the Vogtle spent fuel pool.

cheb # 2

Based on the recent information, provide any changes to the inservice surveillance program for Boraflex neutron absorbing material and describe the frequency of examination and acceptance criteria for continued use. Provide the procedures for testing the Boraflex material and interpretation of test data.

cheb #3

Describe the corrective actions to be taken if degraded Boraflex specimens or absorber is found in the spent fuel pool.