Georgia Power Company
333 Piedmont Avenue
Atlanta, Georgia 30308
Telephone 404 526-3195

Mailing Address
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201
Telephone 205 868-5581

W. G. Hairston, III
Senior Vice President
Nuclear Operations

HL-1659
001700

May 24, 1991

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

PLANT HATCH - UNIT 2
NRC DOCKET 50-366
OPERATING LICENSE NPF-5
REQUEST FOR ADDITIONAL INFORMATION
TEMPORARY RELIEF FROM ASME SECTION XI REQUIREMENTS

Gentlemen:

By letter dated May 21, 1991, Georgia Power Company (GPC) requested temporary relief from ASME Section XI, IWA-5250, pressure testing requirements. The relief was necessary because the non-safety related primary cooling units (Drywell Coolers) are experiencing minor leakage in a factory brazed joint at the header-to- ange connection in the cooler. Based on a discussion with the NRC staff, GPC is providing the enclosed information.

Please contact this office if you have any questions.

Sincerely,

W. G. Hairston, III

W. G. Hairston, III

GKM/cr

Enclosure

cc: (See next page.)

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cc: Georgia Power Company
Mr. H. L. Sumner, General Manager - Nuclear Plant
Mr. J. D. Heidt, Manager Engineering and Licensing - Hatch
NORMS

U.S. Nuclear Regulatory Commission, Washington, D.C.
Mr. K. Jabbour, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II
Mr. S. D. Ebneter, Regional Administrator
Mr. L. D. Wert, Senior Resident Inspector - Hatch

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ENCLOSURE

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NRC Comment:

Provide additional justification that the observed leakage will not degrade over the next cycle.

GPC Response:

GPC does not believe the condition will degrade substantially over the next cycle. It is possible that the observed leakage resulted from the initial fabrication of the brazed joint and there does not appear to be any mechanism which would cause the defect to grow in size while in service.

Based on visual inspection of the affected brazed joints, this leakage appears to have existed for some time, likely since original installation of the coolers. There is no visual evidence of any cracking or service induced flaws to indicate that the brazed joint is degrading over time. The brazed joint connection involves the joining of a relatively thick section of 3" 90/10 Copper-Nickel pipe to a standard ANSI 150 psi carbon steel socket weld flange. This dissimilar joint is difficult to braze, even in the shop, due to the thicknesses involved and the heat sink created by the cooling coils of the cooler itself. The inability to uniformly heat the brazed joint using the oxyacetylene torch brazing method can result in incomplete flow of the braze filler metal into the socket joint. A similar problem was noted by the same vendor during fabrication of replacement coolers for Hatch Unit 1 and was resolved by changing to a braze filler metal with a lower melting point to allow complete flow inside the brazed joint before solidification. It is our opinion that this leakage could have been the result of a fabrication related defect in the original shop brazed joint.

In addition, GPC has considered the following in-service mechanisms and determined these mechanisms are not likely to cause propagation of the existing defects over the next operating cycle:

Equipment Vibration
Nozzle Loads
Thermal Cycles
Erosion
Corrosion
Pressure Surge

NRC Comment:

Discuss alternate methods of monitoring for degradation of the existing leakage condition.

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GPC Response:

GPC will commit to the augmented monitoring actions proposed below as they relate to the drywell cooling system and until the cooler leaks are repaired.

As stated in our May 21, 1991 submittal, GPC already closely monitors drywell leakage in the floor and equipment drain sump. Plant Hatch Unit 2 Technical Specifications limit reactor coolant system (RCS) unidentified boundary leakage to 5 gpm total or a 2 gpm increase. (Unidentified leakage has averaged less than 2 gpm over the last couple of cycles.) Technical Specifications also require total RCS leakage (identified plus unidentified) to be less than 25 gpm. Because of these stringent limits, a sudden increase in drywell leakage would normally be investigated to determine where the leak is occurring.

Makeup for the drywell cooling system is provided by an expansion tank in the reactor building which is refilled with demineralized water automatically. The expansion tank also serves the chilled water system in the reactor building. Nitrite is added to the system as a corrosion inhibitor, and the nitrite level is chemically analyzed weekly.

Based on the above, GPC will commit to monitor any sudden increase in unidentified drywell leakage of more than 1 gpm over a 24-hour period. This monitoring will commence once the unit achieves a steady-state operating condition. If this increase occurs, we will chemically monitor the nitrite concentration in the drywell cooling system to determine if the leakage is from the drywell coolers. A leakage in the chilled water system of 1 gpm should be readily detectable by the chemical analysis.

NRC Comment:

Provide the basis for the Appendix J allowable leakage criteria of 360 accm.

GPC Response:

Penetration leakage limits are based on valve type, valve size, number of valves tested in parallel paths, and historical leakage data. The allowable leakage for these penetrations is 1800 standard cubic centimeters per minute (sccm) air based on 150 sccm/in of valve diameter. When equated to actual ccm (accm), the acceptable leakage for this penetration is 360 accm. As reported in our May 21, 1991 submittal, the actual leakage was 76 accm. GPC has also completed the Appendix J local leak tests (LLRTs) for the current Unit 2 outage. An integrated (Type A) test was not performed. The as-left leakage for Type B and C tests is approximately one-third of the allowable 0.6 L_a. Converting the margin in the as-left condition of the containment air leakage to a water leak equates to a margin of approximately 6 gallons per minute.